Issuance Date: April 12, 2001
Effective Date: April 12, 2001
Expiration Date: April 12, 2006

AIR OPERATING PERMIT WA 000007-8
(LVFAOP17.DOC)

In compliance with the provisions of The State of Washington
Clean Air Act Chapter 70.94 Revised Code of Washington

Longview Fibre Company
P.O. Box 639
Longview, WA. 98632

is authorized to emit in accordance
with the terms and conditions
of this permit.

Issued by:

State of Washington
DEPARTMENT OF ECOLOGY
300 Desmond Drive
P.O. Box 47600
Olympia, Washington 98504-7600

_____	_____
Carol Kraege, P.E.	Marc Heffner, P.E.
Industrial Section Manager	Environmental Engineer

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INTRODUCTION AND LEGAL AUTHOURITY

This Air Operating Permit is authorized under the Operating Permit Regulation, Chapter 173-401 WAC. The provisions of this permit describe the emissions limitations, operating requirements, monitoring and recording requirements, and reporting frequencies for the permitted source.

Longview Fibre Company requires a Title V Air Operating Permit because it emits or has the potential to emit, one hundred tons per year or more of one or more air pollutants (WAC 173-401-300(1)).

During the drafting of this permit Ecology has attempted to incorporate requirements using the exact language of the law, regulation, or order. In some cases, this has not been possible. Where there is a difference in language, this difference is presented in this permit only for clarification of the underlying requirement The legal requirement remains the underlying requirement. Any conflict between the permit and an underlying requirement that is not acknowledged in this permit or its Support Document, nor is addressed in past orders or permits referenced in this permit or its Support Document, will be resolved by referring to the underlying requirement. Unless otherwise stated, the effective date of referenced regulations or statutes is that of the provision in effect on the date of permit issuance.

The Title V Air Operating Permit consists of all parts of this assembled document including all Appendices.

The definition of terms contained in WAC 173-401-200, and as defined in all referenced regulations, apply to this permit unless otherwise defined in the permit.

EMISSION UNIT SPECIFIC REQUIREMENTS [WAC 173-401-600]

Requirements included in the permit are federally enforceable per WAC 173-401-625, unless specifically identified as being state-only requirements. The emission units covered by conditions A through H are subject to the following emission limits. General requirements that apply to monitoring, recordkeeping, and reporting for these limits are in the Facility-Wide section of this permit. Monitoring and reporting requirements are requirements that the permittee uses to determine compliance and are specific to each limit listed in the emission unit specific tables, and should be read in conjunction with the general requirements. Unless specified otherwise, the basis of authority for the type and frequency of monitoring imposed in conditions A through H is WAC 173-401-615.

Averages over time specified in emission limits shall be determined by the arithmetic mean of measurements taken during the specified time period. Compliance determination with a source test on an emission unit with one stack shall be the arithmetic mean of three test periods of at least one-hour. Compliance determination with a source test on an emission unit with two stacks (PBs 12 & 13; SDTs 15, 18, & 19; and LK 5) shall be the arithmetic mean of two test periods of at least one-hour on each stack with the exception of the LK 5 SO_2 test. The LK 5 SO_2 test shall be the arithmetic mean of three test periods of at least one-hour on one of the stacks. Compliance determination with a source test on an emission unit with four stacks (PB 20) shall be the arithmetic mean of one test period of at least one-hour on each stack. Results of test runs found to be invalid shall be eliminated and results of the remaining valid test runs shall be used to find the arithmetic mean and determine compliance. (Order DE 00AQIS-704).

Source test requirements are dependant on the number of hours a unit is operated (Order DE 00AQIS-704).

- Units with a specified source test frequency of monthly must be tested each month the unit is operated more than 216 hours (30% of a 30 day month). Also, a source test must be completed during the month if at the end of the month, unit operation since the end of the month when the last previous source test was run would exceed 720 hours (100% of a 30 day month).
- Units with a specified source test frequency of quarterly must be tested each quarter the unit is operated more than 648 hours (30% of three 30 day months). Also, a source test must be completed during the month if at the end of the quarter, unit operation since the end of the quarter when the last previous source test was run would exceed 2160 hours (100% of three 30 day months).

The emission limits shall be monitored at the monitoring frequency and with the compliance test methods specified for the specific emission units. When the applicable requirement for a limit is an Ecology Order or a PSD Permit: the department may approve alternate compliance test methods that are of equivalent stringency for any air pollutant (DE 00AQIS-704 and PSD-X81-10A). When the applicable requirement for a limit is an Ecology Order: compliance monitoring frequency may be adjusted by Ecology depending on compliance history (Order DE 00AQIS-704). Abbreviations for test methods are included in unit specific emission requirements. Test methods are defined as follows:

RM 5 — For NSPS sources including Recovery Furnace No. 22, Smelt Dissolving Tank No. 22, Lime Kiln No. 5, and Power boiler No. 20; Reference Method 5 of 40 CFR, Part 60, Appendix A, or an alternative approved by Ecology, under the assumption that all of the particulate collected is PM10.

For all other sources; Reference Method 5 of 40 CFR, Part 60, Appendix A, or Ecology Method 5 as found in the 'Source Test Manual - Procedures for Compliance Testing', 1983, or an alternative approved by Ecology, under the assumption that all of the particulate collected is PM10.

RM 6c Reference Method 6c of 40 CFR, Part 60, Appendix A, or an alternative approved by Ecology. For SO_2 source tests conducted on a stack with a continuous TRS monitor, the test may be conducted using LVF Source Test Method 201, a modification of Method 6c which uses the TRS monitor in an SO_2 monitoring mode (see Appendix A).

RM 9 Reference Method 9 of 40 CFR, Part 60, Appendix A; or Ecology Method 9B as found in the 'Source Test Manual - Procedures for Compliance Testing', 1983, or an alternative approved by Ecology.

RM 16 Reference Method 16 of 40 CFR, Part 60, Appendix A, and measured as H_2S, or an alternative approved by Ecology. LVF Source Test Method 202, which captures gas in a Tedlar bag for analysis, may be used to test smelt dissolving tank TRS emissions (see Appendix A).

RM 25A Reference Method 25A of 40 CFR, Part 60, Appendix A, and measured as C, or an alternative approved by Ecology.

Refer to Appendix B for emission estimate algorithms. These algorithms set forth the manner by which emissions are calculated for those requirements for which the Reference Method itself does not directly result in an emission estimate. The Permittee may use an equivalent alternative method with written approval from Ecology.

A1. Recovery Furnace 15

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
A1.1	PM & PM10	0.033 gr/dscf @ 8% O_2, one hour average.	Sample quarterly using RM 5 (see footnote A1F.1). Report test results in monthly report for months when tested.	Order DE 00AQIS-704.
	PM	0.10 gr/dscf @ 8% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(1)(a).
A1.2	Opacity	20% average for more than 6 consecutive minutes in any 60 minute period.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. B, Perf. Spec. 1. (see footnote A1F.2). Report daily maximum concentrations, daily average concentrations, and excursions monthly. Compliance may also be determined using RM 9.	Order DE 00AQIS-704.
		35% average for more than 6 consecutive minutes in any 60 minute period.	Same as for previous limit.	WAC 173-405-040(6).
A1.3	SO_2	60 ppm @ 8% O_2, one hour average.	Sample quarterly using RM 6C. Report test results in monthly report for months when tested.	Order DE 00AQIS-704.
		500 ppm @ 8% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(11)(a).
A1.4	TRS	17.5 ppm @ 8% O_2, 24 hr average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5 (see footnote A1F.3). Report daily maximum concentrations, daily average concentrations, and excursions monthly.	Order DE 00AQIS-704.
A1.5	CO	7.5 T/D, 24 hr average.	Calculate and report per footnote A1F.4.	PSD-X81-10A.
A1.6	NOx	1.2 T/D, 24 hr average.	Calculate and report per footnote A1F.4.	PSD-X81-10A.
A1.7	O_2	no limit - required for O_2 correction	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 3.	Order DE 00AQIS-704.

A1.8	The annual heat input from fossil fuels shall be less than 10 percent of the potential annual heat input from all fuels. Compliance shall be determined by procedures in 40 CFR Part 60.45b. Fuel oil with a sulfur content greater than 0.5 percent may not be burned except during emergency conditions, such as a malfunction in the natural gas supply line serving the area or the mill. During such conditions oil with a sulfur content greater than 0.5 percent shall only be burned during startups, shutdowns or to burn out a high bed. When oil is burned under non-emergency conditions then Longview Fibre shall demonstrate low sulfur oil content firing by keeping a record of the times, volumes, and sulfur content and maintaining at Longview Fibre fuel receipts from the fuel supplier which certify that the oil meets the fuel sulfur limit. Tall oil with sulfur content not to exceed 0.5 percent sulfur by weight may be substituted for fuel oil. (Order DE 00AQIS-704).

Footnotes:

A1F.1 During source tests on all recovery furnaces; primary voltage, primary current, opacity, and spark rate shall be recorded for each field once during each source test and the data shall be submitted with the source test data. In addition, secondary voltage and secondary current data shall also be collected once during each source test and submitted along with the other data, when available. The department may modify or waive this requirement. (Order DE 00AQIS-704).

A1F.2 Scrubber monitoring is required when exhaust gasses are being emitted as a result of combustion in the unit or the unit ID fan is being operated as part of the cool down process for unit shutdown. LVF shall continuously monitor opacity upstream of the

scrubber and scrubber flow rate. If the opacity monitor indicates a six minute average opacity ≤20%, LVF must maintain a scrubber flow rate greater than 2000 gpm on an hourly average. If the opacity monitor indicates a six minute average opacity >20%, LVF must maintain a scrubber flow rate greater than 2500 gpm on an hourly average. The scrubber flow rate shall be continuously monitored and the flow rate recorded every 4 hours. Whenever flow drops below the prescribed rates, LVF will immediately, but no later than within 24 hours, initiate corrective action to bring the flow within prescribed parameters. Failure to take corrective action is a violation of the permit. LVF shall report episodes of failure to maintain adequate flow and the corrective actions taken on the monthly report. (Order DE 00AQIS-704).

A1F.3 The continuous TRS monitoring requirement does not apply during time periods when the TRS monitoring equipment is being used to conduct a required SO_2 source test.

A1F.4 Recovery Furnace Compliance. (PSD-X81-10A).

Compliance with RF Nos. 15, 18, and 19 NOx and CO limits shall be calculated as follows:

Tons per day NOx limits

$$ppmdv\ NOx \times \frac{million}{10^6} \times air\ flow \left(\frac{\text{dscf @ 8\% O2}}{\text{minute}} \right) \times \frac{1440\ \text{minute}}{\text{day}} \times \frac{46\ \text{lb NOx}}{385\ \text{scf NOx}} \times \frac{ton\ \text{NOx}}{2000\ \text{lb NOx}} = \frac{\text{ton NOx}}{\text{day}}$$

Tons per day CO limits

$$ppmdv\ CO \times \frac{million}{10^6} \times air\ flow \left(\frac{\text{dscf @ 8\% O2}}{\text{minute}} \right) \times \frac{1440\ \text{minute}}{\text{day}} \times \frac{28\ \text{lb CO}}{385\ \text{scf CO}} \times \frac{ton\ \text{CO}}{2000\ \text{lb CO}} = \frac{\text{ton CO}}{\text{day}}$$

The following information for each of the recovery furnaces shall be included in the monthly report:

average firing rate (lbs BLS/hour) for each day of the month,
calculated air flow (dscf @ 8% O_2/minute) for each day of the month, and
NOx and CO (tons/day) emitted for each day of the month.

The NOx concentration, CO concentration, and air flow rate shall be determined as follows for the equations to calculate emissions during the first five years after permit issuance:

Average NOx and CO concentrations from RF Nos. 15, 18, & 19:

Source	Average NOx (ppmdv)*	Average CO (ppmdv)**
RF 15	40	105
RF 18	58	47
RF 19	41	206

$$* \quad ppmdv\ NOx = \frac{dscf\ NOx}{10^6\ \text{dscf}}$$

$$** \quad ppmdv\ CO = \frac{dscf\ CO}{10^6\ \text{dscf}}$$

Air flow rate calculation:

$$air\ flow \left(\frac{\text{dscf @ 8\% O}_2}{\text{minute}} \right) = \left(1.3758 \times \left(\frac{lb\ BLS}{hour} \right)^* \right) + 19631$$

* average hourly rate for the day

The average NOx and CO concentrations, and the air flow rate relationship shall be updated every fifth year. At least 24 hours of additional data shall be collected to supplement the existing data prior to recalculation. Data collection shall conform with Reference Method 7 of 40 CFR, Part 60, Appendix A for NOx and Reference Method 10 of 40 CFR, Part 60, Appendix A for CO. The method of recalculation shall be as follows:

NOx and CO concentrations:

(0.6 × EA) + (0.4 × AF) = updated average

Where:
EA is the existing average used for emission calculations, and
AF is the average of data collected during the five year period.

Air flow rate:

An updated data set will be established for analysis. The updated data set will: include the new data points collected during the five year period, and remove the oldest data points from the data set. The number of new data points included shall be equal to the number of old data points removed.

A regression analysis shall be run on the updated data set and the updated slope and intercept will be substituted into the air flow rate equation.

The updated NOx and CO average concentrations and the updated equation for calculation of air flow rate shall be submitted to Ecology prior to the end of the fifth year after permit issuance, and every five years thereafter. Calculation with the updated NOx and CO average concentrations and the updated equation for calculation of air flow rate shall commence at the end of the fifth year after permit issuance, and every five years thereafter.

A2. Recovery Furnace 18

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
A2.1	PM & PM10	0.076 gr/dscf @ 8% O_2, one hour average.	Sample monthly using RM 5 (see footnote A1F.1). Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
	PM	0.10 gr/dscf @ 8% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(1)(a).
A2.2	Opacity	35% average for more than 6 consecutive minutes in any 60 minute period.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. B, Perf. Spec. 1. Report daily maximum concentrations, daily average concentrations, and excursions monthly. Compliance may also be determined using RM 9.	WAC 173-405-040(6) and Order DE 00AQIS-704 for basis of limit. Order DE 00AQIS-704 for basis of monitoring.
A2.3	SO_2	300 ppm @ 8% O_2, one hour average.	Sample monthly using RM 6c. Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
		500 ppm @ 8% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(11)(a).
A2.4	TRS	17.5 ppm @ 8% O_2, 24 hr average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5 (see footnote A1F.3). Report daily maximum concentrations, daily average concentrations, and excursions monthly.	Order DE 00AQIS-704.
A2.5	CO	7.9 T/D, 24 hr average.	Calculate and report per footnote A1F.4.	PSD-X81-10A.
A2.6	NOx	1.2 T/D, 24 hr average.	Calculate and report per footnote A1F.4.	PSD-X81-10A.
A2.7	O_2	no limit – required for O_2 correction	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 3.	Order DE 00AQIS-704.

A2.8	The annual heat input from fossil fuels shall be less than 10 percent of the potential annual heat input from all fuels. Compliance shall be determined by procedures in 40 CFR Part 60.45b. Fuel oil with a sulfur content greater than 0.5 percent may not be burned except during emergency conditions, such as a malfunction in the natural gas supply line serving the area or the mill. During such conditions oil with a sulfur content greater than 0.5 percent shall only be burned during startups, shutdowns or to burn out a high bed. When oil is burned under non-emergency conditions then Longview Fibre shall demonstrate low sulfur oil content firing by keeping a record of the times, volumes, and sulfur content and maintaining at Longview Fibre fuel receipts from the fuel supplier which certify that the oil meets the fuel sulfur limit. Tall oil with sulfur content not to exceed 0.5 percent sulfur by weight may be substituted for fuel oil. (Order DE 00AQIS-704).

A3. Recovery Furnace 19

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
A3.1	PM & PM10	0.066 gr/dscf @ 8% O_2, one hour average.	Sample monthly using RM 5 (see footnote A1F.1). Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
	PM	0.10 gr/dscf @ 8% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(1)(a).
A3.2	Opacity	35% average for more than 6 consecutive minutes in any 60 minute period.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. B, Perf. Spec. 1. Report daily maximum concentrations, daily average concentrations, and excursions monthly. Compliance may also be determined using RM 9.	WAC 173-405-040(6) and Order DE 00AQIS-704 for basis of limit. Order DE 00AQIS-704 for basis of monitoring.
A3.3	SO_2	300 ppm @ 8% O_2, one hour average.	Sample monthly using RM 6c. Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
		500 ppm @ 8% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(11)(a).
A3.4	TRS	10.0 ppm @ 8% O_2, 24 hr average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5 (see footnote A1F.3). Report daily maximum concentrations, daily average concentrations, and excursions monthly.	Order DE 00AQIS-704.
A3.5	CO	13.1 T/D, 24 hr average.	Calculate and report per footnote A1F.4.	PSD-X81-10A.
A3.6	NOx	2.1 T/D, 24 hr average.	Calculate and report per footnote A1F.4.	PSD-X81-10A.
A3.7	O_2	no limit – required for O_2 correction	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 3.	Order DE 00AQIS-704.

A3.8	The annual heat input from fossil fuels shall be less than 10 percent of the potential annual heat input from all fuels. Compliance shall be determined by procedures in 40 CFR Part 60.45b. Fuel oil with a sulfur content greater than 0.5 percent may not be burned except during emergency conditions, such as a malfunction in the natural gas supply line serving the area or the mill. During such conditions oil with a sulfur content greater than 0.5 percent shall only be burned during startups, shutdowns or to burn out a high bed. When oil is burned under non-emergency conditions then Longview Fibre shall demonstrate low sulfur oil content firing by keeping a record of the times, volumes, and sulfur content and maintaining at Longview Fibre fuel receipts from the fuel supplier which certify that the oil meets the fuel sulfur limit. Tall oil with sulfur content not to exceed 0.5 percent sulfur by weight may be substituted for fuel oil. (Order DE 00AQIS-704).

A4. Recovery Furnace 22

The source shall comply with the requirements of 40 CFR Part 60 Subpart BB. The source shall also comply with the general requirements of 40 CFR Part 60 including:

40 CFR 60.7(b) & (f) concerning recordkeeping,
40 CFR 60.7(c), (d), & (e) concerning reporting,
40 CFR 60.11(d) concerning operation and maintenance,
40 CFR 60.12 concerning concealment,
40 CFR 60.13 concerning monitoring, and
40 CFR 60.19 concerning notification and reporting.

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
A4.1	PM & PM10	0.027 gr/dscf @ 8% O_2, one hour average.	Sample quarterly using RM 5 (see footnote A1F.1). Report test results in monthly report for months when tested.	Order DE 00AQIS-704.
	PM	0.044 gr/dscf @ 8% O_2.	Same as for previous limit.	40 CFR 60.282(a)(1)(i).
	PM	0.10 gr/dscf @ 8% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(1)(a).
A4.2	Opacity	20% average for more than 6 consecutive minutes in any 60 minute period.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. B, Perf. Spec. 1. Report daily maximum concentrations, daily average concentrations, and excursions monthly. Compliance may also be determined using RM 9.	Order DE 00AQIS-704.
		35% average for more than 6 consecutive minutes in any 60 minute period.	Same as for previous limit. If the total number of contiguous periods of excess emissions in a quarter is less than six percent of the total number of operating hours (excluding startup, shutdown, or malfunction) during the quarter, the excess emissions do not constitute a violation of this requirement. (see footnote A4F.1)	40 CFR 60.282(a)(1)(ii) and WAC 173-405-040(6) for basis of limit. 40 CFR 60.284(a)(1) and 40 CFR 60.284(e)(1)(ii) for basis of monitoring.
A4.3	SO_2	120 ppm @ 8% O_2, 3 hour average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. B, Perf. Spec. 2. Report daily maximum concentrations, three-hour average concentrations, and excursions monthly.	Order DE 00AQIS-704.
		500 ppm @ 8% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(11)(a).
A4.4	TRS	3.0 ppm @ 8% O_2, 12 hr average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5 (see footnote A1F.3). Report daily maximum concentrations, 12-hour average concentrations, and excursions monthly.	Order DE 00AQIS-704.
		5.0 ppm @ 8% O_2, 24 hr average.	Same as for previous limit.	WAC 173-405-040(1)(c).
		5 ppm @ 8% O_2, 12 hr average.	Same as for previous limit. If the total number of contiguous periods of excess emissions in a quarter is less than one percent of the total number of operating hours (excluding startup, shutdown, or malfunction) during the quarter, the excess emissions do not constitute a violation of this requirement. (see footnote A4F.1).	40 CFR 60.283(a)(2) for basis of limit. 40 CFR 60.284(a)(2) and 40 CFR 60.284(e)(1)(i) for basis of monitoring.
			Record 12-hour average concentration for two consecutive 12-hour periods each day.	40 CFR 60.284(c)(1).

A4.5	CO	300 ppm @ 8% O_2, 8 hour average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 4. Report daily maximum concentrations, eight-hour average concentrations, and excursions monthly.	PSD-X81-10A.
		3.8 T/D, 24 hr average.	Calculate with continuous monitoring data from previous limit. Report daily emissions and excursions monthly.	
A4.6	NOx	95 ppm @ 8% O_2, 3 hour average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 2. Report daily maximum concentrations, three-hour average concentrations, and excursions monthly.	PSD-X81-10A.
		2.0 T/D, 24 hr average.	Calculate with continuous monitoring data from previous limit. Report daily emissions and excursions monthly.	
A4.7	O_2	no limit – required for O_2 correction	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 3.	40 CFR 60.284(a)(2) and Order DE 00AQIS-704.
			Record 12-hour average concentration for two consecutive 12-hour periods each day.	40 CFR 60.284(c)(2).

A4.8	The annual heat input from fossil fuels shall be less than 10 percent of the potential annual heat input from all fuels. Compliance shall be determined by procedures in 40 CFR Part 60.45b. Fuel oil with a sulfur content greater than 0.5 percent may not be burned except during emergency conditions, such as a malfunction in the natural gas supply line serving the area or the mill. During such conditions oil with a sulfur content greater than 0.5 percent shall only be burned during startups, shutdowns or to burn out a high bed. When oil is burned under non-emergency conditions then Longview Fibre shall demonstrate low sulfur oil content firing by keeping a record of the times, volumes, and sulfur content and maintaining at Longview Fibre fuel receipts from the fuel supplier which certify that the oil meets the fuel sulfur limit. Tall oil with sulfur content not to exceed 0.5 percent sulfur by weight may be substituted for fuel oil. (Order DE 00AQIS-704).

Footnotes:

A4F.1 Excess emissions reports meeting the requirements of 40 CFR 60.284(d) & (e) shall be submitted. The reports shall be submitted semi-annually, but may be submitted more frequently.

B1. Smelt Dissolving Tanks 15

Opacity limits apply to each stack individually. All other limits apply to the total emissions from the combined stacks.

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
B1.1	PM & PM10	0.30 lb/T BLS, one hour average.	Sample monthly using RM 5. Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
	PM	0.30 lb/T BLS, one hour average.	Same as for previous limit.	WAC 173-405-040(2).
B1.2	Opacity	35% average for more than 6 consecutive minutes in any 60 minute period.	See footnote B1F.1.	WAC 173-405-040(6) and Order DE 00AQIS-704 for basis of limit. Order DE 00AQIS-704 for basis of monitoring.
B1.3	SO_2	0.31 T/D, 24 hour average.	Sample one time per three years using RM 6C (see footnote B1F.2). Report test results in monthly report for months when tested.	Order DE 00AQIS-704.
		1000 ppm, one hour average.	Same as for previous limit.	WAC 173-405-040(11)(b).
B1.4	TRS	0.18 T/D, 24 hour average.	Sample one time per three years using RM 16 (see footnote B1F.2). Report test results in monthly report for months when tested.	Order DE 00AQIS-704.

Footnotes:

B1F.1 Scrubber monitoring is required when exhaust gasses are being emitted from the smelt dissolving tank vent during combustion in the associated recovery furnace or the associated recovery furnace ID fan is being operated as part of the cool down process for recovery furnace shutdown. Monitor water flow, fan status, tank draft, and explosion dampers as performance indicator parameters. Check the fresh water flow once per shift to assure the flow rate is ≥10 gpm. Continuously monitor the fan to assure it is operating. Continuously monitor draft at the smelt dissolving tank to assure it is operating under negative pressure. Continuously monitor the explosion dampers and check at least once per shift to assure they are closed. After the pads in the mist eliminators have been cleaned or replaced and before the unit is placed back in service, visually inspect the pads to assure they are correctly installed. Maintain an inspection log of the required checks. Whenever any of these performance indicator parameters are not met, corrective action must be initiated within 24 hours. Failure to initiate corrective action within 24 hours is a violation of WAC 173-405-040(10) and may be a violation of the underlying applicable requirement. Report deviations from these operating parameters that last longer than one hour and corrective action in the monthly report. Compliance may also be determined by RM 9. (Order DE 00AQIS-704).

B1F.2 Monitoring frequency of one test per three years is based on proven compliance at the source. If the limit is exceeded, monthly source testing is required. After 6 months of demonstrating compliance with the limit, LVF may request reconsideration of decreased testing frequency. (Order DE 00AQIS-704).

B2. Smelt Dissolving Tanks 18

Opacity limits apply to each stack individually. All other limits apply to the total emissions from the combined stacks.

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
B2.1	PM & PM10	0.30 lb/T BLS, one hour average.	Sample monthly using RM 5. Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
	PM	0.30 lb/T BLS, one hour average.	Same as for previous limit.	WAC 173-405-040(2).
B2.2	Opacity	35% average for more than 6 consecutive minutes in any 60 minute period.	See footnote B2F.1.	WAC 173-405-040(6) and Order DE 00AQIS-704 for basis of limit. Order DE 00AQIS-704 for basis of monitoring.
B2.3	SO_2	0.19 T/D, 24 hour average.	Sample one time per three years using RM 6C (see footnote B1F.2). Report test results in monthly report for months when tested.	Order DE 00AQIS-704.
		1000 ppm, one hour average.	Same as for previous limit.	WAC 173-405-040(11)(b).
B2.4	TRS	0.19 T/D, 24 hour average.	Sample one time per three years using RM 16 (see footnote B1F.2). Report test results in monthly report for months when tested.	Order DE 00AQIS-704.

Footnotes:

B2F.1 Scrubber monitoring is required when exhaust gasses are being emitted from the smelt dissolving tank vent during combustion in the associated recovery furnace or the associated recovery furnace ID fan is being operated as part of the cool down process for recovery furnace shutdown. Monitor fresh water flow, recirculation water flow, fan status, tank draft, and explosion dampers as performance indicator parameters. Check the fresh water flow and recirculation water flow once per shift to assure the flow rate is ≥1 gpm. Continuously monitor the fan to assure it is operating. Continuously monitor draft at the smelt dissolving tank to assure it is operating under negative pressure. Continuously monitor the explosion dampers and check at least once per shift to assure they are closed. After the pads in the mist eliminators have been cleaned or replaced and before the unit is placed back in service, visually inspect the pads to assure they are correctly installed. Maintain an inspection log of the required checks. Whenever any of these performance indicator parameters are not met, corrective action must be initiated within 24 hours. Failure to initiate corrective action within 24 hours is a violation of WAC 173-405-040(10) and may be a violation of the underlying applicable requirement. Report deviations from these operating parameters that last longer than one hour and corrective action in the monthly report. Compliance may also be determined by RM 9. (Order DE 00AQIS-704).

B3. Smelt Dissolving Tanks 19

Opacity limits apply to each stack individually. All other limits apply to the total emissions from the combined stacks.

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
B3.1	PM & PM10	0.12 lb/T BLS, one hour average.	Sample monthly using RM 5. Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
	PM	0.30 lb/T BLS, one hour average.	Same as for previous limit.	WAC 173-405-040(2).
B3.2	Opacity	20% average for more than 6 consecutive minutes in any 60 minute period.	See footnote B3F.1.	Order DE 00AQIS-704.
		35% average for more than 6 consecutive minutes in any 60 minute period.	Same as for previous limit.	WAC 173-405-040(6).
B3.3	SO_2	0.43 T/D, 24 hour average.	Sample one time per three years using RM 6C (see footnote B1F.2). Report test results in monthly report for months when tested.	Order DE 00AQIS-704.
		1000 ppm, one hour average.	Same as for previous limit.	WAC 173-405-040(11)(b).
B3.4	TRS	0.31 T/D, 24 hour average.	Sample one time per three years using RM 16 (see footnote B1F.2). Report test results in monthly report for months when tested.	Order DE 00AQIS-704.

Footnotes:

B3F.1 Scrubber monitoring is required when exhaust gasses are being emitted from the smelt dissolving tank vent during combustion in the associated recovery furnace or the associated recovery furnace ID fan is being operated as part of the cool down process for recovery furnace shutdown. Monitor the scrubber water flow rate to the venturi, the scrubber water flow rate to the packed tower, and the explosion dampers as performance indicator parameters. Continuously monitor the scrubber water flow rate to the venturi and the scrubber water flow rate to the packed tower. Record the average flow rates for each hour. Maintain the hourly average scrubber water flow rate to the venturi ≥80 gpm and the hourly average scrubber water flow rate to the packed tower ≥60 gpm. Continuously monitor the explosion dampers and check at least once per shift to assure they are closed. Whenever any of these performance indicator parameters are not met, corrective action must be initiated within 24 hours. Failure to initiate corrective action within 24 hours is a violation of WAC 173-405-040(10) and may be a violation of the underlying applicable requirement. Report deviations from these operating parameters that last longer than one hour and corrective action in the monthly report. Compliance may also be determined by RM 9. (Order DE 00AQIS-704).

B4. Smelt Dissolving Tank 22

The source shall comply with the requirements of 40 CFR Part 60 Subpart BB. The source shall also comply with the general requirements of 40 CFR Part 60 including:

40 CFR 60.7(b) & (f) concerning recordkeeping,
40 CFR 60.7(c), (d), & (e) concerning reporting,
40 CFR 60.11(d) concerning operation and maintenance,
40 CFR 60.12 concerning concealment,
40 CFR 60.13 concerning monitoring, and
40 CFR 60.19 concerning notification and reporting.

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
B4.1	PM & PM10	0.12 lb/T BLS, one hour average.	Sample monthly using RM 5. Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
	PM	0.2 lb/T BLS, one hour average.	Same as for previous limit.	40 CFR 60.282(a)(2).
	PM	0.30 lb/T BLS, one hour average.	Same as for previous limit.	WAC 173-405-040(2).
B4.2	Opacity	20% average for more than 6 consecutive minutes in any 60 minute period.	See footnote B4F.1.	Order DE 00AQIS-704.
		35% average for more than 6 consecutive minutes in any 60 minute period.	Same as for previous limit.	WAC 173-405-040(6).
B4.3	SO_2	0.085 T/D, 24 hour average.	Sample one time per three years using RM 6C (see footnote B1F.2). Report test results in monthly report for months when tested.	Order DE 00AQIS-704.
		1000 ppm, one hour average.	Same as for previous limit.	WAC 173-405-040(11)(b).
B4.4	TRS	0.0164 T/D, 24 hour average.	Sample one time per three years using RM 16 (see footnote B1F.2). Report test results in monthly report for months when tested.	Order DE 00AQIS-704.
		0.033 lb/T BLS as H_2S	Same as for previous limit.	40 CFR 60.283(a)(4).

Footnotes:

B4F.1 Scrubber monitoring is required when exhaust gasses are being emitted from the smelt dissolving tank vent during combustion in the associated recovery furnace or the associated recovery furnace ID fan is being operated as part of the cool down process for recovery furnace shutdown. Monitor the scrubber water flow rate to the venturi, the scrubber water flow rate to the packed tower, and the explosion damper as performance indicator parameters. Continuously monitor the scrubber water flow rate to the venturi and the scrubber water flow rate to the packed tower. Record the average flow rates for each hour. Maintain the hourly average scrubber water flow rate to the venturi ≥80 gpm and the hourly average scrubber water flow rate to the packed tower ≥60 gpm. Continuously monitor the explosion damper and check at least once per shift to assure it is closed. Whenever any of these performance indicator parameters are not met, corrective action must be initiated within 24 hours. Failure to initiate corrective action within 24 hours is a violation of WAC 173-405-040(10) and may be a violation of the underlying applicable requirement. Report deviations from these operating parameters that last longer than one hour and corrective action in the monthly report. Compliance may also be determined by RM 9. (Order DE 00AQIS-704).

C1. Lime Kiln 1

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
C1.1	PM & PM10	0.13 gr/dscf @ 10% O_2, one hour average.	Sample monthly using RM 5. Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
	PM	0.13 gr/dscf @ 10% O_2, one hour average.	Same as previous limit.	WAC 173-405-040(3)(a).
C1.2	Opacity	35% average for more than 6 consecutive minutes in any 60 minute period.	See footnote C1F.1.	WAC 173-405-040(6) and Order DE 00AQIS-704 for basis of opacity limit. Order DE 00AQIS-704 for alternate opacity monitoring.
C1.3	SO_2	41 ppm @ 10% O_2, one hour average.	Sample monthly using RM 6c. Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
		500 ppm @ 10% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(11)(a).
C1.4	TRS	20 ppm @ 10% O_2, 24 hour average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5 (see footnote C1F.2). Report daily maximum concentrations, daily average concentrations, and excursions monthly.	Order DE 00AQIS-704.
		temperature ≥1200° F and retention time ≥0.5 seconds when burning NCGs.	Monitor unit operation, flame safety interlocks, and interlock connections to NCG valves. Report NCG venting per condition G1.2.	40 CFR 60.283(a)(1)(iii).
C1.5	O_2	no limit - required for O_2 correction	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 3.	Order DE 00AQIS-704.

C1.6 The following **state-only** requirements are not federally enforceable under the federal Clean Air Act:

C1.6a	TRS	20 ppm @ 10% O_2, 24 hour average.	Limit met by meeting Condition C1.4.	WAC 173-405-040(3)(c).
		80 ppm H_2S @ 10% O_2 for more than 2 consecutive hours	Monitor TRS continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5. Report excursions monthly. All TRS monitored is considered H_2S for this limit.	WAC 173-405-040(3)(b).

Footnotes:

C1F.1 Scrubber monitoring is required when exhaust gasses are being emitted as a result of combustion in the unit or the unit ID fan is being operated as part of the cool down process for unit shutdown. Monitor the scrubber recirculation water flow rate continuously as a performance indicator parameter. Record the average flow rate for each hour. Maintain hourly average recirculation water flow rate ≥200 gpm. Whenever the hourly average flow rate is <200 gpm, the permittee will initiate corrective action within 24 hours to bring the flow rate to ≥200 gpm. Failure to initiate corrective action within 24 hours is a violation of WAC 173-405-040(10) and may be a violation of the underlying applicable requirement. Report hourly averages <200 gpm and the corrective action in the monthly report. Compliance may also be determined using RM 9. (Order DE 00AQIS-704).

C1F.2 The continuous TRS monitoring requirement does not apply during time periods when the TRS monitoring equipment is being used to conduct a required SO_2 source test.

C2. Lime Kiln 2

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
C2.1	PM & PM10	0.13 gr/dscf @ 10% O_2, one hour average.	Sample monthly using RM 5. Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
	PM	0.13 gr/dscf @ 10% O_2, one hour average.	Same as previous limit.	WAC 173-405-040(3)(a).
C2.2	Opacity	35% average for more than 6 consecutive minutes in any 60 minute period.	See footnote C2F.1.	WAC 173-405-040(6) and Order DE 00AQIS-704 for basis of opacity limit. Order DE 00AQIS-704 for alternate opacity monitoring.
C2.3	SO_2	41 ppm @ 10% O_2, one hour average.	Sample monthly using RM 6c. Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
		500 ppm @ 10% O_2, one hour average.	same as for previous limit.	WAC 173-405-040(11)(a).
C2.4	TRS	20 ppm @ 10% O_2, 24 hour average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5 (see footnote C1F.2). Report daily maximum concentrations, daily average concentrations, and excursions monthly.	Order DE 00AQIS-704.
		temperature ≥1200° F and retention time ≥0.5 seconds when burning NCGs.	Monitor unit operation, flame safety interlocks, and interlock connections to NCG valves. Report NCG venting per condition G1.2.	40 CFR 60.283(a)(1)(iii).
C2.5	O_2	no limit - required for O_2 correction	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 3.	Order DE 00AQIS-704.

C2.6 The following **state-only** requirements are not federally enforceable under the federal Clean Air Act:

C2.6a	TRS	20 ppm @ 10% O_2, 24 hour average.	Limit met by meeting Condition C2.4.	WAC 173-405-040(3)(c).
		80 ppm H_2S @ 10% O_2 for more than 2 consecutive hours	Monitor TRS continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5. Report excursions monthly. All TRS monitored is considered H_2S for this limit.	WAC 173-405-040(3)(b).

Footnotes:

C2F.1 Scrubber monitoring is required when exhaust gasses are being emitted as a result of combustion in the unit or the unit ID fan is being operated as part of the cool down process for unit shutdown. Monitor the scrubber recirculation water flow rate continuously as a performance indicator parameter. Record the average flow rate for each hour. Maintain hourly average recirculation water flow rate ≥200 gpm. Whenever the hourly average flow rate is <200 gpm, the permittee will initiate corrective action within 24 hours to bring the flow rate to ≥200 gpm. Failure to initiate corrective action within 24 hours is a violation of WAC 173-405-040(10) and may be a violation of the underlying applicable requirement. Report hourly averages <200 gpm and the corrective action in the monthly report. Compliance may also be determined using EPA Method 9. (Order DE 00AQIS-704).

C3. Lime Kiln 3

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
C3.1	PM & PM10	0.13 gr/dscf @ 10% O_2, one hour average.	Sample monthly using RM 5. Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
	PM	0.13 gr/dscf @ 10% O_2, one hour average.	Same as previous limit.	WAC 173-405-040(3)(a).
C3.2	Opacity	35% average for more than 6 consecutive minutes in any 60 minute period.	See footnote C3F.1.	WAC 173-405-040(6) and Order DE 00AQIS-704 for basis of opacity limit. Order DE 00AQIS-704 for alternate opacity monitoring.
C3.3	SO_2	41 ppm @ 10% O_2, one hour average.	Sample monthly using RM 6c. Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
		500 ppm @ 10% O_2, one hour average.	same as for previous limit.	WAC 173-405-040(11)(a).
C3.4	TRS	20 ppm @ 10% O_2, 24 hour average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5 (see footnote C1F.2). Report daily maximum concentrations, daily average concentrations, and excursions monthly.	Order DE 00AQIS-704.
		temperature ≥1200° F and retention time ≥0.5 seconds when burning NCGs.	Monitor unit operation, flame safety interlocks, and interlock connections to NCG valves. Report NCG venting per condition G1.2.	40 CFR 60.283(a)(1)(iii).
C3.5	O_2	no limit - required for O_2 correction	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 3.	Order DE 00AQIS-704.

C3.6 The following **state-only** requirements are not federally enforceable under the federal Clean Air Act:

C3.6a	TRS	20 ppm @ 10% O_2, 24 hour average.	Limit met by meeting Condition C3.4.	WAC 173-405-040(3)(c).
		80 ppm H_2S @ 10% O_2 for more than 2 consecutive hours	Monitor TRS continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5. Report excursions monthly. All TRS monitored is considered H_2S for this limit.	WAC 173-405-040(3)(b).

Footnotes:

C3F.1 Scrubber monitoring is required when exhaust gasses are being emitted as a result of combustion in the unit or the unit ID fan is being operated as part of the cool down process for unit shutdown. Monitor the scrubber recirculation water flow rate continuously as a performance indicator parameter. Record the average flow rate for each hour. Maintain hourly average recirculation water flow rate ≥250 gpm. Whenever the hourly average flow rate is <250 gpm, the permittee will initiate corrective action within 24 hours to bring the flow rate to ≥250 gpm. Failure to initiate corrective action within 24 hours is a violation of WAC 173-405-040(10) and may be a violation of the underlying applicable requirement. Report hourly averages <250 gpm and the corrective action in the monthly report. Compliance may also be determined using EPA Method 9. (Order DE 00AQIS-704).

C4. Lime Kiln 4

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
C4.1	PM & PM10	0.13 gr/dscf @ 10% O_2, one hour average.	Sample monthly using RM 5. Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
	PM	0.13 gr/dscf @ 10% O_2, one hour average.	Same as previous limit.	WAC 173-405-040(3)(a).
C4.2	Opacity	35% average for more than 6 consecutive minutes in any 60 minute period.	See footnote C4F.1.	WAC 173-405-040(6) and Order DE 00AQIS-704 for basis of opacity limit. Order DE 00AQIS-704 for alternate opacity monitoring.
C4.3	SO_2	41 ppm @ 10% O_2, one hour average.	Sample monthly using RM 6c. Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
		500 ppm @ 10% O_2, one hour average.	same as for previous limit.	WAC 173-405-040(11)(a).
C4.4	TRS	20 ppm @ 10% O_2, 24 hour average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5 (see footnote C1F.2). Report daily maximum concentrations, daily average concentrations, and excursions monthly.	Order DE 00AQIS-704.
		temperature ≥1200° F and retention time ≥0.5 seconds when burning NCGs.	Monitor unit operation, flame safety interlocks, and interlock connections to NCG valves. Report NCG venting per condition G1.2.	40 CFR 60.283(a)(1)(iii).
C4.5	O_2	no limit - required for O_2 correction	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 3.	Order DE 00AQIS-704.

C4.6 The following **state-only** requirements are not federally enforceable under the federal Clean Air Act:

C4.6a	TRS	20 ppm @ 10% O_2, 24 hour average.	Limit met by meeting Condition C.4.	WAC 173-405-040(3)(c).
		80 ppm H_2S @ 10% O_2 for more than 2 consecutive hours	Monitor TRS continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5. Report excursions monthly. All TRS monitored is considered H_2S for this limit.	WAC 173-405-040(3)(b).

Footnotes:

C4F.1 Scrubber monitoring is required when exhaust gasses are being emitted as a result of combustion in the unit or the unit ID fan is being operated as part of the cool down process for unit shutdown. Monitor the scrubber recirculation water flow rate continuously as a performance indicator parameter. Record the average flow rate for each hour. Maintain hourly average recirculation water flow rate ≥175 gpm. Whenever the hourly average flow rate is <175 gpm, the permittee will initiate corrective action within 24 hours to bring the flow rate to ≥175 gpm. Failure to initiate corrective action within 24 hours is a violation of WAC 173-405-040(10) and may be a violation of the underlying applicable requirement. Report hourly averages <175 gpm and the corrective action in the monthly report. Compliance may also be determined using EPA Method 9. (Order DE 00AQIS-704).

C5. Lime Kiln 5

The source shall comply with the requirements of 40 CFR Part 60 Subpart BB. The source shall also comply with the general requirements of 40 CFR Part 60 including:
40 CFR 60.7(b) & (f) concerning recordkeeping,
40 CFR 60.7(c), (d), & (e) concerning reporting,
40 CFR 60.11(d) concerning operation and maintenance,
40 CFR 60.12 concerning concealment,
40 CFR 60.13 concerning monitoring, and
40 CFR 60.19 concerning notification and reporting.

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
C5.1	PM & PM10	0.070 gr/dscf @ 10% O_2 when burning oil and 0.035 gr/dscf @ 10% O_2 when burning gas, one hour average.	Sample quarterly using RM 5. Report test results in monthly report for months when tested.	Order DE 00AQIS-704.
	PM	0.13 gr/dscf @ 10% O_2 when burning oil and 0.067 gr/dscf @ 10% O_2 when burning gas, one hour average.	Same as for previous limit.	40 CFR 60.282(a)(3).
		0.13 gr/dscf @ 10% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(3)(a).
C5.2	Opacity	25% average for more than 6 consecutive minutes in any 60 minute period.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. B, Perf. Spec. 1. Report excursions monthly. Compliance may also be determined using RM 9.	Order DE 00AQIS-704.
		35% average for more than 6 consecutive minutes in any 60 minute period.	Same as for previous limit.	WAC 173-405-040(6).
C5.3	SO_2	500 ppm @ 10% O_2, one hour average.	Sample quarterly using RM 6c. Report test results in monthly report for months when tested.	WAC 173-405-040(11)(a)and Order DE 00AQIS-704 for basis of limit. Order DE 00AQIS-704 for basis of monitoring.
C5.4	TRS	8 ppm @ 10% O_2, 12 hour average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5 (see footnote C1F.2). Report daily maximum concentrations, 12-hour average concentrations, and excursions monthly. See footnote C5F.1.	40 CFR 60.283(a)(5) and Order DE 00AQIS-704 for basis of limit. 40 CFR 60.284(a)(2) and Order DE 00AQIS-704 for basis of monitoring.
			Record 12-hour average concentration for two consecutive 12-hour periods each day.	40 CFR 60.284(c)(1).

C5.5	CO	500 ppm @ 10% O_2, 8 hour average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 4. Report daily maximum concentrations, eight-hour average concentrations, and excursions monthly.	PSD-X81-10A.
		0.8 T/D, 24 hr average.	Calculate with continuous monitoring data from previous limit. Report daily emissions and excursions monthly.	
C5.6	NOx	1.0 T/D, 24 hr average.	Calculate and report per footnote C5F.2.	PSD-X81-10A.
C5.7	O_2	no limit – required for O_2 correction	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 3.	40 CFR 60.284(a)(2) and Order DE 00AQIS-704.
			Record 12-hour average concentration for two consecutive 12-hour periods each day.	40 CFR 60.284(c)(2).

C5.8 The following **state-only** requirements are not federally enforceable under the federal Clean Air Act:

C5.8a	TRS	20 ppm @ 10% O_2, 24 hour average.	Limit met by meeting Condition C5.4.	WAC 173-405-040(3)(c).
		80 ppm H_2S @ 10% O_2 for more than 2 consecutive hours	Monitor TRS continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5. Report excursions monthly. All TRS monitored is considered H_2S for this limit.	WAC 173-405-040(3)(b).

Footnotes:

C5F.1 Excess emissions reports meeting the requirements of 40 CFR 60.284(d) & (e) shall be submitted. The reports shall be submitted semi-annually, but may be submitted more frequently.

C5F.2 Compliance with the LK No. 5 NOx limit shall be calculated as follows:

Tons per day of NOx

$$ppmdv\ NOx \times \frac{\text{million}}{10^6} \times air\ flow\left(\frac{\text{dscf @10\% O2}}{\text{ton CaO}}\right) \times \frac{46\ \text{lb NOx}}{385\ \text{dscf NOx}} \times \frac{ton\ \text{NOx}}{2000\ \text{lb NOx}} \times \frac{\text{tons CaO}}{day} = \frac{\text{tons NOx}}{\text{day}}$$

The following information shall be included in the monthly report:
CaO produced (tons/day) for each day of the month, and
NOx (tons/day) emitted for each day of the month.

The NOx concentration and air flow rate shall be determined as follows for use in the equations to calculate emissions during the first five years after permit issuance:

Average NOx concentration from LK No. 5:

Source	Average NOx (ppmdv)*
LK5	44

$$* \quad ppmdv\ NOx = \frac{dscf\ NOx}{10^6\ \text{dscf}}$$

Air flow rate calculation:

Air flow is the sum of combustion and CO_2 generated by the calcine reaction:

Combustion air flow:
#5 lime kiln "economy" = 6.5 x 10^6 BTU/ton CaO
F-factor for natural gas = 8740 dscf/10^6 BTU

$$\frac{8740\ \text{dscf}}{10^6\ \text{BTU}} \times \frac{6.5 \times 10^6\ \text{BTU}}{\text{ton CaO}} = \frac{56{,}810\ \text{dscf}\ @0\%\ O_2}{\text{ton CaO}} \times \left(\frac{20.9}{20.9 - 10}\right) = \frac{108{,}930\ \text{dscf}\ @10\%\ O_2}{\text{ton CaO}}$$

Calcine reaction air flow ($CaCO_3$ => $CaO + CO_2$):

$$\frac{2000\ \text{lb CaO}}{\text{ton CaO}} \times \frac{44\ \text{lb}\ CO_2}{56\ \text{lb CaO}} \times \frac{385\ \text{dscf}\ CO_2}{44\ \text{lb}\ CO_2} = \frac{13{,}750\ \text{dscf}\ @0\%\ O_2}{\text{ton CaO}} \times \left(\frac{20.9}{20.9 - 10}\right) = \frac{26{,}360\ \text{dscf}\ @10\%\ O_2}{\text{ton CaO}}$$

Total air flow rate = combustion air + calcine reaction air
= 135,290 dscf @ 10% O_2/ton CaO

The average NOx concentration and the air flow rate shall be updated every fifth year. At least 24 hours of additional data shall be collected to supplement the existing data prior to recalculation. Data collection shall conform with Reference Method 7 of 40 CFR, Part 60, Appendix A for NOx. The method of recalculation shall be as follows:

NOx concentration:

(0.6 × EA) + (0.4 × AF) = updated average

Where:
EA is the existing average used for emission calculations, and
AF is the average of data collected during the five year period.

Air flow rate:

An updated data set will be established for analysis of #5 lime kiln "economy". The update will:
include the new data points collected during the five year period, and
remove the oldest data points from the data. The number of new data points included shall be equal to the number of old data points removed.

#5 lime kiln "economy" will be recalculated using the updated data set and the updated #5 lime kiln "economy" will be substituted into the air flow rate calculation to determine the total air flow.

The updated NOx average concentration and the updated calculation of the total air flow rate shall be submitted to Ecology prior to the end of the fifth year after permit issuance, and every five years thereafter. Calculation of permit compliance using the updated NOx average concentration and the updated total air flow rate shall commence at the end of the fifth year after permit issuance, and every five years thereafter.

D1. Power Boiler 12

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
D1.1	PM & PM10	0.10 gr/dscf @ 7% O_2, one hour average.	Sample quarterly using RM 5. Report test results in monthly report for months when tested.	Order DE 00AQIS-704.
	PM	0.2 gr/dscf @ 7% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(5)(a).
D1.2	Opacity	20% average for more than 6 consecutive minutes in any 60 minute period (see footnote D1F.1).	See footnote D1F.2.	Order DE 00AQIS-704.
		Average 20% for more than 6 consecutive minutes in any 60 minute period, except for emissions due to soot blowing or grate cleaning for up to 15 minutes in 8 consecutive hours.	Same as for previous limit.	WAC 173-405-040(6) for basis of limit. WAC 173-400-105(5)(d) for basis of monitoring.
D1.3	SO_2	12.8 T/D, 24 hour average	Calculate and report per footnote D1F.3.	Order DE 00AQIS-704.
		1000 ppm @ 7% O_2, hourly average.	Same as for previous limit.	WAC 173-405-040(11)(b).
D1.4	TRS	temperature ≥1200° F and retention time ≥0.5 seconds when burning NCGs.	Monitor unit operation, flame safety interlocks, and interlock connections to NCG valves. Report NCG venting per condition G1.2.	40 CFR 60.283(a)(1)(iii).

D1.5 Unit must employ RACT. Per WAC 173-401-605(3), RACT is defined as emission standards and other requirements in effect at the time of air operating permit issuance. Unit must be operated and maintained to minimize emissions. (WAC 173-400-070(2)(b)).

D1.6 One of either Power boilers 12, 13, 16, 17 or 20 shall be off-line whenever the Cogen is operating. A unit is considered off-line whenever steam production is zero. Four hours of time for operational overlap is allowed for normal start-up and normal shutdown of these units. The operational status of power boilers 12, 13, 16, 17, 20 and the Cogen shall be monitored by steam production as indicated on recording charts and operators logs. A record of daily hours of operation and steam production, including identification of hours when the off-line requirement is not met, shall be recorded and reported monthly to the Department of Ecology. (Order DE 00AQIS-704).

D1.7 Medical/infectious waste generated by operation of the on site medical center and from clean up of mill accidents may be co-combusted in Power Boiler Nos. 12, 13, and/or 20. LVF shall not combust medical/infectious waste other than that generated by operation of the on site medical center and from clean up of mill accidents. During each calendar quarter, the weight of medical/infectious waste combusted shall not exceed 0.01% of the total weight of hog fuel, fuel oil, and natural gas combusted in the power boilers (sum of fuel burned in Nos. 12, 13, and 20). Also, for each calendar year, the total weight of medical/infectious waste burned in the power boilers (sum of medical/infectious waste burned in Nos. 12, 13, and 20), shall not exceed 5,000 pounds.

LVF shall report in the monthly report within 15 days of the end of each calendar quarter:

a. the weight of medical/infectious waste combusted during the calendar quarter,
b. the total weight of hog fuel, fuel oil, and natural gas combusted in the power boilers (sum of fuel burned in Nos. 12, 13, and 20) during the calendar quarter,
c. the ratio of a:b as a percentage for the calendar quarter, and
d. the weight of medical/infectious waste combusted during the calendar year to date. (Order DE 99AQ-I052).

Footnotes:

D1F.1 The exception for emissions due to soot blowing or grate cleaning for up to 15 minutes in 8 consecutive hours applies to this limit (WAC 173-405-040(6).

D1F.2 Scrubber monitoring is required when exhaust gasses are being emitted as a result of combustion in the unit or the unit ID fan is being operated as part of the cool down process for unit shutdown. Monitor flow over the weirs and backpressure from the scrubbers as performance indicator parameters at each of the two scrubbers. Check the weirs six times per day, at approximately four hour intervals, to assure intermittent flow occurs. Check the scrubbers, at the same frequency, to verify there is backpressure from the scrubbers. Maintain an inspection log of the required checks. Whenever any of these performance indicator parameters are not met, corrective action must be initiated within 24 hours. Failure to initiate corrective action within 24 hours is a violation of WAC 173-405-040(10) and may be a violation of the underlying applicable requirement. Report deviations from these operating parameters that last longer than one hour and corrective action in the monthly report. Compliance may also be determined by RM 9. (Order DE 00AQIS-704).

D1F3. Compliance with PB Nos. 12 and 13 SO_2 limits shall be calculated as follows:

Tons per day of SO_2 = SO_2 from fuel oil + SO_2 from turpentine + SO_2 from NCGs

The tons per day of SO_2 from the individual fuel sources shall be calculated as follows:

SO_2 from fuel oil shall be calculated as follows:

$$\frac{\text{BBL oil}}{\text{day}} \times \frac{42\,\text{gal}}{\text{BBL}} \times \frac{8.27\,\text{lb oil}}{\text{gal}} \times \frac{\text{lb S}}{\text{lb oil}} \times \frac{64\,\text{lb SO}_2}{32\,\text{lb S}} \times \frac{ton\,\text{SO}_2}{2000\,\text{lb SO}_2} \times 0.75 = \frac{\text{ton SO}_2}{\text{day}}$$

where lb S/lb oil is the ratio for the most recent load of fuel oil delivered for use in the boilers.

SO_2 from turpentine shall be calculated as follows:

$$\frac{\text{gal turp}}{\text{day}} \times \frac{7.26\,\text{lb turp}}{\text{gal}} \times \frac{\text{lb S}}{\text{lb turp}} \times \frac{64\,\text{lb SO}_2}{32\,\text{lb S}} \times \frac{ton\,\text{SO}_2}{2000\,\text{lb SO}_2} \times 0.75 = \frac{\text{ton SO}_2}{\text{day}}$$

SO_2 from NCGs shall be calculated as follows:

$$\frac{\text{dscf}}{\text{day}} \times \frac{\text{dscf SO}_2}{10^6\ \text{dscf}} \times \frac{64\,\text{lb SO}_2}{385\,\text{scf SO}_2} \times \frac{ton\,\text{SO}_2}{2000\,\text{lb SO}_2} \times 0.75 = \frac{\text{tonSO}_2}{\text{day}}$$

The following information for each of the power boilers shall be included in the monthly report:
BBL of oil burned in each unit for each day of the month,
percent sulfur in the oil burned,
gallons/day of turpentine burned in each unit for each day of the month,
dscf/min of NCG flow to each unit for each day of the month, and
SO_2 (tons/day) emitted from each unit for each day of the month.

The sulfur concentration of turpentine and the SO_2 concentration from NCGs shall be determined as follows for the equations to calculate emissions during the first five years after permit issuance:

the sulfur concentration in turpentine is 0.25% by weight, and
the SO_2 concentration from NCGs is 3000 ppmdv.

The average sulfur concentration in turpentine and the SO_2 concentration from NCGs shall be updated every fifth year. At least six new data points shall be collected to supplement the existing data prior to recalculation. Data collection for the SO_2 concentration from NCGs shall conform with LVF Method 296 included in Appendix A of this order. The method of recalculation shall be as follows:

(0.6 × EA) + (0.4 × AF) = updated average

Where:
EA is the existing average used for emission calculations, and
AF is the average of data collected during the five year period.

The updated average sulfur concentration in turpentine and the updated SO_2 concentration from NCGs shall be submitted to Ecology prior to the end of the fifth year after permit issuance, and every five years thereafter. Calculation with the updated average sulfur concentration in turpentine and the updated SO_2 concentration from NCGs shall commence at the end of the fifth year after permit issuance, and every five years thereafter.

D2. Power Boiler 13

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
D2.1	PM & PM10	0.10 gr/dscf @ 7% O_2, one hour average.	Sample quarterly using RM 5. Report test results in monthly report for months when tested.	Order DE 00AQIS-704.
	PM	0.2 gr/dscf @ 7% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(5)(a).
D2.2	Opacity	20% average for more than 6 consecutive minutes in any 60 minute period (see footnote D1F.1).	See footnote D1F.2.	Order DE 00AQIS-704.
		Average 20% for more than 6 consecutive minutes in any 60 minute period, except for emissions due to soot blowing or grate cleaning for up to 15 minutes in 8 consecutive hours.	Same as for previous limit.	WAC 173-405-040(6) for basis of limit. WAC 173-400-105(5)(d) for basis of monitoring.
D2.3	SO_2	12.8 T/D, 24 hour average	Calculate and report per footnote D1F.3.	Order DE 00AQIS-704.
		1000 ppm @ 7% O_2, hourly average.	Same as for previous limit.	WAC 173-405-040(11)(b).
D2.4	TRS	temperature ≥1200° F and retention time ≥0.5 seconds when burning NCGs.	Monitor unit operation, flame safety interlocks, and interlock connections to NCG valves. Report NCG venting per condition G1.2.	40 CFR 60.283(a)(1)(iii).

D2.5 Unit must employ RACT. Per WAC 173-401-605(3), RACT is defined as emission standards and other requirements in effect at the time of air operating permit issuance. Unit must be operated and maintained to minimize emissions. (WAC 173-400-070(2)(b)).

D2.6 One of either Power boilers 12, 13, 16, 17 or 20 shall be off-line whenever the Cogen is operating. A unit is considered off-line whenever steam production is zero. Four hours of time for operational overlap is allowed for normal start-up and normal shutdown of these units. The operational status of power boilers 12, 13, 16, 17, 20 and the Cogen shall be monitored by steam production as indicated on recording charts and operators logs. A record of daily hours of operation and steam production, including identification of hours when the off-line requirement is not met, shall be recorded and reported monthly to the Department of Ecology. (Order DE 00AQIS-704).

D2.7 Medical/infectious waste generated by operation of the on site medical center and from clean up of mill accidents may be co-combusted in Power Boiler Nos. 12, 13, and/or 20. LVF shall not combust medical/infectious waste other than that generated by operation of the on site medical center and from clean up of mill accidents. During each calendar quarter, the weight of medical/infectious waste combusted shall not exceed 0.01% of the total weight of hog fuel, fuel oil, and natural gas combusted in the power boilers (sum of fuel burned in Nos. 12, 13, and 20). Also, for each calendar year, the total weight of medical/infectious waste burned in the power boilers (sum of medical/infectious waste burned in Nos. 12, 13, and 20), shall not exceed 5,000 pounds.

LVF shall report in the monthly report within 15 days of the end of each calendar quarter:

a. the weight of medical/infectious waste combusted during the calendar quarter,
b. the total weight of hog fuel, fuel oil, and natural gas combusted in the power boilers (sum of fuel burned in Nos. 12, 13, and 20) during the calendar quarter,
c. the ratio of a:b as a percentage for the calendar quarter, and
d. the weight of medical/infectious waste combusted during the calendar year to date. (Order DE 99AQ-I052).

D3. Power Boiler 16

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
D3.1	PM & PM10	1.3 T/D, 24 hour average.	Sample quarterly using RM 5. Report test results in monthly report for months when tested (see footnote D3F.1).	Order DE 00AQIS-704 for basis of limit. Monitoring and reporting established by AOP.
	PM	0.1 gr/dscf @ 7% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(5)(c).
D3.2	Opacity	Average 20% for more than 6 consecutive minutes in any 60 minute period, except for emissions due to soot blowing or grate cleaning for up to 15 minutes in 8 consecutive hours.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. B, Perf. Spec. 1. Report daily maximum concentrations, daily average concentrations, and excursions monthly. Compliance may also be determined using RM 9.	WAC 173-405-040(6) for basis of limit. WAC 173-400-105(5)(a) for basis of monitoring.
		20% average for more than 6 consecutive minutes in any 60 minute period (see footnote D1F.1).	Same as for previous limit.	Order DE 00AQIS-704.
D3.3	SO_2	1000 ppm @ 7% O_2, hourly average.	Calculate and report per footnote D3F.2.	WAC 173-405-040(11)(b)and Order DE 00AQIS-704 for basis of limit. Order DE 00AQIS-704 for basis of monitoring.

D3.4 One of either Power boilers 12, 13, 16, 17 or 20 shall be off-line whenever the Cogen is operating. A unit is considered off-line whenever steam production is zero. Four hours of time for operational overlap is allowed for normal start-up and normal shutdown of these units. The operational status of power boilers 12, 13, 16, 17, 20 and the Cogen shall be monitored by steam production as indicated on recording charts and operators logs. A record of daily hours of operation and steam production, including identification of hours when the off-line requirement is not met, shall be recorded and reported monthly to the Department of Ecology. (Order DE 00AQIS-704).

Footnotes:

D3F.1 The quarterly sampling shall begin no later than the October-December quarter of 2003. In the interim, opacity will serve as a surrogate measure of PM & PM10 emissions. Periods with an average opacity greater than 20% for more than 60 consecutive minutes shall be reported as PM & PM10 violations.

D3F.2 Compliance with PB Nos. 16 and 17 SO_2 limits shall be calculated as follows:

$$SO2\ (\text{ppmdv}@7\%\,O_2) = \frac{volume\ of\ SO2\left(\frac{dscf\ SO2}{day}\right)}{oil\ air\ flow\left(\frac{dscf}{day}@7\%\,O2\right) + gas\ air\ flow\left(\frac{dscf}{day}@7\%\,O2\right)} \times \frac{10^6}{million}$$

volume of SO_2 shall be calculated as follows:

$$\frac{\text{BBL oil}}{\text{day}} \times \frac{42\,\text{gal}}{\text{BBL}} \times \frac{8.27\,\text{lb oil}}{\text{gal}} \times \frac{\text{lb S}}{\text{lb oil}} \times \frac{64\,\text{lb SO}_2}{32\,\text{lb S}} \times \frac{385\,\text{scf SO}_2}{64\,\text{lb SO}_2} = \frac{\text{dscf SO}_2}{\text{day}}$$

where lb S/lb oil is the ratio for the most recent load of fuel oil delivered for use in the boilers.

oil air flow shall be calculated as follows:

F-factor for oil = 9220 dscf/10^6 Btu:
heat of combustion for oil = 153,700 Btu/gal

$$\frac{\text{BBL oil}}{day}\times\frac{9220\,\text{dscf}}{10^6\ \text{BTU}}\times\frac{42\,\text{gal}}{BBL}\times\frac{153{,}700\,\text{Btu}}{\text{gal}}\times\frac{20.9}{20.9-7}=\frac{\text{dscf}}{\text{day}}@\,7\%\,O_2$$

gas air flow shall be calculated as follows:

F-factor for gas = 8740 dscf/10^6 Btu:

$$\frac{\text{therms}}{\text{day}}\times\frac{8740\ \text{dscf}}{10^6\ \text{BTU}}\times\frac{10^6\ \text{BTU}}{10\,\text{therms}}\times\frac{20.9}{20.9-7}=\frac{\text{dscf}}{\text{day}}@\,7\%\,O_2$$

The following information for each of the power boilers shall be included in the monthly report:
- BBL of oil burned in each unit for each day of the month,
- percent sulfur in the oil burned,
- therms natural gas burned in each unit for each day of the month, and
- SO_2 (ppm) emitted from each unit for each day of the month.

D4. Power Boiler 17

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
D4.1	PM & PM10	1.4 T/D, 24 hour average.	Sample quarterly using RM 5. Report test results in monthly report for months when tested (see footnote D3F.1).	Order DE 00AQIS-704 for basis of limit. Monitoring and reporting established by AOP.
	PM	0.1 gr/dscf @ 7% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(5)(c).
D4.2	Opacity	Average 20% for more than 6 consecutive minutes in any 60 minute period, except for emissions due to soot blowing or grate cleaning for up to 15 minutes in 8 consecutive hours.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. B, Perf. Spec. 1. Report daily maximum concentrations, daily average concentrations, and excursions monthly. Compliance may also be determined using RM 9.	WAC 173-405-040(6) for basis of limit. WAC 173-400-105(5)(a) for basis of monitoring.
		20% average for more than 6 consecutive minutes in any 60 minute period (see footnote D1F.1).	Same as for previous limit.	Order DE 00AQIS-704.
D4.3	SO_2	1000 ppm @ 7% O_2, hourly average.	Calculate and report per footnote D3F.2.	WAC 173-405-040(11)(b)and Order DE 00AQIS-704 for basis of limit. Order DE 00AQIS-704 for basis of monitoring.

D4.4 One of either Power boilers 12, 13, 16, 17 or 20 shall be off-line whenever the Cogen is operating. A unit is considered off-line whenever steam production is zero. Four hours of time for operational overlap is allowed for normal start-up and normal shutdown of these units. The operational status of power boilers 12, 13, 16, 17, 20 and the Cogen shall be monitored by steam production as indicated on recording charts and operators logs. A record of daily hours of operation and steam production, including identification of hours when the off-line requirement is not met, shall be recorded and reported monthly to the Department of Ecology. (Order DE 00AQIS-704).

D5. Power Boiler 20

The source shall comply with the requirements of 40 CFR Part 60 Subpart D. The source shall also comply with the general requirements of 40 CFR Part 60 including:
40 CFR 60.7(b) & (f) concerning recordkeeping,
40 CFR 60.7(c), (d), & (e) concerning reporting,
40 CFR 60.11(d) concerning operation and maintenance,
40 CFR 60.12 concerning concealment,
40 CFR 60.13 concerning monitoring, and
40 CFR 60.19 concerning notification and reporting.

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
D5.1	PM & PM10	0.10 lb/mmBtu, one hour average.	Sample monthly using RM 5. Source testing shall be reduced to quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Report test results monthly.	Order DE 00AQIS-704.
	PM	0.10 lb/mmBtu.	Same as for previous limit.	40 CFR 60.42(a)(1).
		0.2 gr/dscf @ 7% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(5)(a).
D5.2	Opacity	20% average for more than 6 consecutive minutes in any 60 minute period (see footnote D1F.1).	See footnote D5F.1.	Order DE 00AQIS-704.
		Average 20% for more than 6 consecutive minutes in any 60 minute period, except for one six minute period of not more than 27% opacity.	Same as for previous limit (see footnotes D5F.2 and D5F.3).	40 CFR 60.42(a)(2) for basis of limit. 40 CFR 60.45(a) for basis of monitoring.
		Average 20% for more than 6 consecutive minutes in any 60 minute period, except for emissions due to soot blowing or grate cleaning for up to 15 minutes in 8 consecutive hours.	Same as for previous limit.	WAC 173-405-040(6) for basis of limit. WAC 173-400-105(5)(d) for basis of monitoring.
D5.3	SO_2	0.8 lb/mmBtu, 3 hour average	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. B, Perf. Spec. 2. Report daily maximum concentrations, three-hour average concentrations, and excursions monthly (see footnote D5F.2).	40 CFR 60.43(a)(1) for basis of limit. 40 CFR 60.45(a) for basis of monitoring.
		0.8 lb/mmBtu, 24 hour average.	Same as for previous limit.	Order DE 00AQIS-704.
		1000 ppm @ 7% O_2, hourly average.	Same as for previous limit.	WAC 173-405-040(11)(b).

D5.4	NO_x	0.20 lb/mmBtu, 3 hour average when burning only natural gas.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 2. Report daily maximum concentrations, three-hour average concentrations, and excursions monthly (see footnote D5F.2).	40 CFR 60.44(a)(1) for basis of limit. 40 CFR 60.45(a) for basis of monitoring.
		0.30 lb/mmBtu, 3 hour average when burning other fuels.	Same as for previous limit.	40 CFR 60.44(a)(2) for basis of limit. 40 CFR 60.45(a) for basis of monitoring.
		0.2 lb/mmBtu when gas fired, 0.3 lb/mmBtu with other fuel, 24 hour average.	Same as for previous limit.	Order DE 00AQIS-704.
D5.5	O_2	no limit - required to correct for O_2.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 3.	40 CFR 60.45(a) and Order DE 00AQIS-704.

D5.6 Unit must employ RACT. Per WAC 173-401-605(3), RACT is defined as emission standards and other requirements in effect at the time of air operating permit issuance. Unit must be operated and maintained to minimize emissions. (WAC 173-400-070(2)(b)).

D5.7 One of either Power boilers 12, 13, 16, 17 or 20 shall be off-line whenever the Cogen is operating. A unit is considered off-line whenever steam production is zero. Four hours of time for operational overlap is allowed for normal start-up and normal shutdown of these units. The operational status of power boilers 12, 13, 16, 17, 20 and the Cogen shall be monitored by steam production as indicated on recording charts and operators logs. A record of daily hours of operation and steam production, including identification of hours when the off-line requirement is not met, shall be recorded and reported monthly to the Department of Ecology. (Order DE 00AQIS-704).

D5.8 Medical/infectious waste generated by operation of the on site medical center and from clean up of mill accidents may be co-combusted in Power Boiler Nos. 12, 13, and/or 20. LVF shall not combust medical/infectious waste other than that generated by operation of the on site medical center and from clean up of mill accidents. During each calendar quarter, the weight of medical/infectious waste combusted shall not exceed 0.01% of the total weight of hog fuel, fuel oil, and natural gas combusted in the power boilers (sum of fuel burned in Nos. 12, 13, and 20). Also, for each calendar year, the total weight of medical/infectious waste burned in the power boilers (sum of medical/infectious waste burned in Nos. 12, 13, and 20), shall not exceed 5,000 pounds.

LVF shall report in the monthly report within 15 days of the end of each calendar quarter:

a. the weight of medical/infectious waste combusted during the calendar quarter,
b. the total weight of hog fuel, fuel oil, and natural gas combusted in the power boilers (sum of fuel burned in Nos. 12, 13, and 20) during the calendar quarter,
c. the ratio of a:b as a percentage for the calendar quarter, and
d. the weight of medical/infectious waste combusted during the calendar year to date. (Order DE 99AQ-I052).

Footnotes:

D5F.1 Scrubber monitoring is required when exhaust gasses are being emitted as a result of combustion in the unit or the unit ID fan is being operated as part of the cool down process for unit shutdown. Monitor flow over the weirs and backpressure from the scrubbers as performance indicator parameters at each of the four scrubbers. Check the weirs six times per day, at approximately four hour intervals, to assure intermittent flow occurs. Check the scrubbers, at the same frequency, to verify there is backpressure from the scrubbers. Maintain an inspection log of the required checks. Whenever any of these performance indicator parameters are not met, corrective action must be initiated within 24 hours. Failure to initiate corrective action within 24 hours is a violation of WAC 173-405-040(10) and may be a violation of the underlying applicable requirement. Report deviations from these operating parameters that last longer than one hour and corrective action in the monthly report. (Order DE 00AQIS-704).

D5F.2 Excess emissions reports meeting the requirements of 40 CFR 60.45(g) shall be submitted. The reports shall be submitted semi-annually, but may be submitted more frequently.

D5F.3 The alternative opacity monitoring requirement has not yet been approved by EPA. Should the monitoring requirements approved by EPA differ from those in Condition D5.2, the

permit will be opened and the condition will be revised to reflect the EPA approved alternative opacity monitoring requirements.

E1. Cogen 23

The source shall comply with the requirements of 40 CFR Part 60 Subpart GG. The source shall also comply with the general requirements of 40 CFR Part 60 including:

40 CFR 60.7(b) & (f) concerning recordkeeping,
40 CFR 60.7(c), (d), & (e) concerning reporting,
40 CFR 60.11(d) concerning operation and maintenance,
40 CFR 60.12 concerning concealment,
40 CFR 60.13 concerning monitoring, and
40 CFR 60.19 concerning notification and reporting.

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
E1.1	PM & PM10	0.002 gr/dscf @ 15% O_2, one hour average.	Sample one time per three years using RM 5 (see footnote E1F.1). Report test results in monthly report for months when tested.	Order DE 00AQIS-704.
	PM	0.05 gr/dscf @ 7% O_2, one hour average.	Same as for previous limit.	WAC 173-405-040(5)(b).
E1.2	Opacity	5% average for more than 6 consecutive minutes in any 60 minute period.	Compliance demonstrated by burning only natural gas (see condition E1.9). Compliance may also be determined using RM 9.	Order DE 00AQIS-704.
		Average 20% for more than 6 consecutive minutes in any 60 minute period, except for emissions due to soot blowing or grate cleaning for up to 15 minutes in 8 consecutive hours.	Same as for previous limit.	WAC 173-405-040(6).
E1.3	SO_2	Fuel ≤0.8% S by weight.	Limit met by burning only natural gas (see footnote E1F.2).	40 CFR 60.333(b) for basis of limit.
		1000 ppm @ 7% O_2, hourly average.	Same as for previous limit.	WAC 173-405-040(11)(b).
E1.4	CO	12 ppm @ 15% O_2, 1 hour average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 4. Report daily maximum concentrations, one-hour average concentrations, and excursions monthly (see footnote E1F.3).	Order DE 00AQIS-704.
		481 lb/D, 24 hr average.	Calculate with continuous monitoring data from previous limit. Report daily emissions and excursions monthly (see footnote E1F.3).	
E1.5	NOx	7 ppm @ 15% O_2, 24 hour average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 2. Report daily maximum concentrations, daily average concentrations, and excursions monthly.	Order DE 00AQIS-704.
		461 lb/D, 24 hr average.	Calculate with continuous monitoring data from previous limit. Report daily emissions and excursions monthly.	
		96 ppm @ 15% O_2, 1 hour average.	Same as for previous concentration limit (see footnote E1F.2).	40 CFR 60.332(a)(2)for basis of limit.

E1.6	NH_3	10 ppm @ 15% O_2, 24 hour average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 2 (see footnote E1F.4). Report daily maximum concentrations, daily average concentrations, and excursions monthly.	Order DE 00AQIS-704.
		244 lb/D, 24 hr average.	Calculate with continuous monitoring data from previous limit. Report daily emissions and excursions monthly.	
E1.7	VOC	0.084 T/D	Sample one time per three years using RM 25A (see footnote E1F.5). Report test results in monthly report for months when tested.	Order DE 00AQIS-704.
E1.8	O_2	no limit – required for O_2 correction	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 3.	Order DE 00AQIS-704.

E1.9 Pipeline quality natural gas shall be the only fuel supplied to and used to operate the Cogen. (Order DE 00AQIS-704).

E1.10 One of either Power boilers 12, 13, 16, 17 or 20 shall be off-line whenever the Cogen is operating. A unit is considered off-line whenever steam production is zero. Four hours of time for operational overlap is allowed for normal start-up and normal shutdown of these units. The operational status of power boilers 12, 13, 16, 17, 20 and the Cogen shall be monitored by steam production as indicated on recording charts and operators logs. A record of daily hours of operation and steam production, including identification of hours when the off-line requirement is not met, shall be recorded and reported monthly to the Department of Ecology. (Order DE 00AQIS-704).

Footnotes:

E1F.1 Monitoring frequency of one test per three years is based on proven compliance at the source. If the limit is exceeded, monthly source testing is required. After 6 months of demonstrating compliance with the limit, LVF may request reconsideration of decreased testing frequency. (Order DE 00AQIS-704).

All particulate matter sampled from the Cogen shall be considered PM-10. However, if Longview Fibre determines the percent PM-10, subject to Ecology approval, they may use this percentage to modify the total particulate matter source test results. (Order DE 00AQIS-704).

E1F.2 Excess emissions reports meeting the requirements of 40 CFR 60.334(c) shall be submitted. The reports shall be submitted semi-annually, but may be submitted more frequently.

E1F.3 The 12 ppm @ 15% O_2 and 481 lbs/D limits do not apply during startup/shutdown conditions. During periods of startup/shutdown, CO emissions from the Cogen shall not exceed 200 ppm @ 15% O_2 on an hourly average and shall not exceed 300 pounds during any hour. Emissions during startup/shutdown shall not be considered part of the daily total of CO emitted when calculating the lbs/D of CO emitted. Startup/shutdown limits shall apply a maximum of 3 hours per day. Periods of operation regulated by the startup/shutdown condition limit shall be reported separately on the monthly report. (Order DE 01AQIS-2038).

E1F.4 Ammonia concentrations shall be calculated continuously using data from inlet and outlet NOx meters meeting PS 2. (Order DE 00AQIS-704).

E1F.5 Monitoring frequency of one test per three years is based on proven compliance at the source during the initial performance test. During the first five years after issuance of Order DE 00AQIS-704 (7/10/00), a VOC source test shall be conducted along with each RATA test conducted on the unit. If the limit is exceeded, monthly source testing is required. After 6 months of demonstrating compliance with the limit, LVF may request reconsideration of decreased testing frequency. (Order DE 00AQIS-704).

F1. Neutral Sulfite Semi-Chemical Plant (NSSC).

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
F1.1	VOC	26.4 T/yr.	Calculate and report per footnote F1F.1.	Order DE 00AQIS-704.

F1.2 Gasses from the new chip bin (presteaming bin), refined stock blow tank, and chemi-washer filtrate vent of the neutral sulfite semi chemical (NSSC) pulping process shall be collected and burned as NCGs. (Order DE 00AQIS-704).

F1.3 Prior to charging any material from the Kraft process into the NSSC system, LVF shall submit information to Ecology and the EPA Office of Air Quality Planning and Standards (OAQPS) for a determination of New Source Performance Standards (NSPS) for Kraft Pulping Mills (40 CFR Subpart BB) applicability. LVF shall provide any additional information requested to make the determination in a timely manner. Prior to charging material from the Kraft process into the NSSC system during the decision making period, LVF shall install and operate controls equivalent to those required by 40 CFR Subpart BB. After receiving the OAQPS decision, Ecology shall, if necessary, issue an Order to LVF concerning compliance with the NSPS rules. (Order DE 00AQIS-704).

F1.4 The operation and maintenance manual for the NSSC shall contain a section specifying best management practices necessary to meet toxics and VOC emission rates included in the NOC application. Copies of the manual shall be kept on file at LVF and be available for Department inspection. Failure to follow the best management practices specified in the manual to meet the toxics and VOC emission rates shall be considered proof of excess emissions due to the equipment not being properly operated and maintained in accordance with RCW 70.94.152(7). (Order DE 00AQIS-704).

Footnotes:

F1F.1 Compliance with NSSC VOC annual limit shall be calculated as follows: (Order DE 00AQIS-704).

Tons per year of VOC =
tons per year of VOC from Hi Density Storage #1
\+ tons per year of VOC from Hi Density Storage #2
\+ tons per year of VOC from Lo Density Storage
\+ tons per year of VOC from the Side Hill Screen
\+ tons per year of VOC from the Wash Water Chest.

The tons per year of VOC from the individual emission points shall be calculated as follows during the first five years after permit issuance:

VOC from Hi Density Storage #1, Hi Density Storage #2, and Lo Density Storage shall be calculated as follows:

$$\frac{\text{hrs NSSC operation}}{\text{yr}} \times \frac{\text{lb C}}{\text{hr}} \times \frac{\text{ton VOC}}{2000\,\text{lb VOC}} = \frac{\text{ton VOC}}{\text{yr}}$$

where lb C/hr is:
0.035 lb C/hr for Hi Density Storage #1,
0.090 lb C/hr for Hi Density Storage #2, and
0.004 lb C/hr for Lo Density Storage.

VOC from the Side Hill Screen and the Wash Water Chest shall be calculated as follows:

$$\frac{\text{ODTP (NSSC)}}{\text{yr}} \times \frac{\text{lb C}}{\text{ODTP}} \times \frac{\text{ton VOC}}{2000\,\text{lb VOC}} = \frac{\text{ton VOC}}{\text{yr}}$$

where lb C/ODTP is:
0.099 lb C/ODTP for the Side Hill Screen, and
0.039 lb C/ODTP for the Wash Water Chest.

The following information for the NSSC shall be included in each December monthly report:
hours of NSSC operation during the calendar year,
NSSC pulp produced for during the calendar year as ODTP, and
VOC emitted in tons/year during the calendar year.

The VOC emission factors:
lb C/hr for Hi Density Storage #1,
lb C/hr for Hi Density Storage #2,
lb C/hr for Lo Density Storage,
lb C/ODTP for the Side Hill Screen, and
lb C/ODTP for the Wash Water Chest
shall be updated every fifth year. At least one source test shall be conducted at each emission point to supplement the existing data prior to emission factor recalculation (due to safety considerations, the Hi Density Storage #2 emission factor may be calculated based on the VOC concentration in the Hi Density Storage #1 vent). Data collection for calculation of the VOC emission factors shall conform with RM 25A as defined in the footnotes for Table 1 of this order. The method of recalculation shall be as follows:

$(0.6 \times EA) + (0.4 \times AF) =$ updated emission factor

Where:
EA is the emission factor used for emission calculations, and
AF is the emission factor for data collected during the five year period.

The updated VOC emission factor shall be submitted to Ecology prior to the end of the fifth year after permit issuance, and every five years thereafter. Calculation with the updated VOC emission factors shall commence at the end of the fifth year after permit issuance, and every five years thereafter.

F2. NSSC Sulfur Burner (SCMS).

The SCMS shares a common stack with lime kiln 3. Emissions from common stacks must meet the most restrictive standards of any of the connected units. (WAC 173-400-040).

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
F2.1	PM	0.10 gr/dscf, one hour average.	Same as for condition C3.1.	WAC 173-410-040(2)(c)(iii).
F2.2	Opacity	35% average for more than 6 consecutive minutes in any 60 minute period.	Same as for condition C3.2.	WAC 173-410-040(3).
F2.3	SO_2	800 ppm, one hour average.	Same as for condition C3.3.	WAC 173-410-040(1)(d).

G1. Digesters, Multiple-Effect Evaporators, Brownstock Washers, and Condensate Stripper Systems

G1.1 Requirements G1.1a and G1.1b apply to Kamyr Digester and Washer No. 1; Kamyr Digester and Washer No. 2; and Multiple-effects evaporator set 10, only:

G1.1a The sources shall comply with the requirements of 40 CFR Part 60 Subpart BB. The source shall also comply with the general requirements of 40 CFR Part 60 including:
40 CFR 60.7(b) & (f) concerning recordkeeping,
40 CFR 60.7(c), (d), & (e) concerning reporting,
40 CFR 60.11(d) concerning operation and maintenance,
40 CFR 60.12 concerning concealment,
40 CFR 60.13 concerning monitoring, and
40 CFR 60.19 concerning notification and reporting.

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
G1.1b	TRS	5 ppmv @ 10% O_2, unless combusted in a lime kiln or equivalent.	Monitoring required by Conditions C1.4, C2.4, C3.4, C4.4, D1.4, and D2.4 shall be used to demonstrate compliance with this requirement (see footnote G1F.1).	40 CFR 60.283(a)(1) for basis of limit. 40 CFR 60,283(a)(1)(iii) for basis of monitoring.

G1.2 All noncondensible gases from the digesters, evaporators, and the condensate stripper system shall be continuously treated to reduce the emission of TRS equal to the reduction achieved by thermal oxidation in a lime kiln.

The noncondensible gasses (NCGs) shall be burned in one of, or a combination of the following units; Lime Kilns 1, 2, 3, and 4, and Power Boilers 12 and 13.

To provide continuous treatment:
- the NCG collection and treatment system shall be properly operated and maintained at all times,
- venting shall be minimized, and
- venting necessary for safe/proper system operation and maintenance shall not exceed 10 hours per month.

Report venting duration and cause in the monthly air report. (WAC 173-405-040(4) and DE 00AQIS-704).

G1.3 The following **state-only** requirements are not federally enforceable under the federal Clean Air Act:

G1.3a	TRS	treat noncondensible gasses to reduce TRS emission equal to reduction achieved by thermal oxidation in a lime kiln; install a backup treatment system.	Monitoring required by Condition G1.1b shall be used to demonstrate compliance with this requirement.	WAC 173-405-040(4).

Footnotes:

G1F.1 Excess emissions reports meeting the requirements of 40 CFR 60.284(d) & (e) shall be submitted. The reports shall be submitted semi-annually, but may be submitted more frequently.

G2. Paper Machine 10

The following conditions shall become void upon issuance of a permit and/or an order issued in accordance with new source review and/or prevention of significant deterioration (PSD) rules specifying plantwide emission and/or production limits. (Order DE 00AQIS-1627).

G2.1 LVF shall notify Ecology in writing within 7 days of start up of PM#10 with the new press section in place. (Order DE 00AQIS-1627).

G2.2 Upon installation of the new press section at PM#10, LVF shall report for PM#10:
- daily steam demand,
- daily production,
- factor limiting production,
- monthly steam demand, and
- monthly production.

The required information shall be submitted with the monthly air report. (Order DE 00AQIS-1627).

G2.3 Within one year of installation of the new press section or after three consecutive months of steam demand at PM#10 exceeding 65,000 tons/month of 175 psig steam (whichever occurs first), LVF shall initiate an engineering report to provide the following information along with supporting data:
- estimated capacity of PM#10 in its present configuration,
- factor(s) limiting production at PM#10, and
- increases/decreases in mill emissions as a result of the project at PM#10.

The report shall be submitted to Ecology within 30 days of initiation. Should emissions increase as a result of the project, application for the proper order/permit shall be submitted with the report. (Order DE 00AQIS-1627).

H1. Millwide Limits

Annual millwide limits are based on the emissions occurring during the calendar year.

	Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
H1.1	PM & PM10	2559 T/yr.	Calculate per footnote H1F.1. Report on monthly report for December.	Order DE 00AQIS-704.
H1.2	SO_2	6071 T/yr.	Calculate per footnote H1F.1. Report on monthly report for December.	Order DE 00AQIS-704.
H1.3	TRS	210 T/yr as H_2S.	Calculate per footnote H1F.1. Report on monthly report for December.	Order DE 00AQIS-704.
H1.4	CO	7554 T/yr.	Calculate per footnote H1F.1. Report on monthly report for December.	PSD-X81-10A.
H1.5	NOx	3999 T/yr.	Calculate per footnote H1F.1. Report on monthly report for December.	PSD-X81-10A.
H1.6	VOC	2876 T/yr.	Calculate per footnote H1F.1. Report on monthly report for December.	Order DE 00AQIS-704.

Footnotes:

H1F.1 Compliance with the annual limits for PM and PM10, SO_2, TRS, CO, and NOx shall be determined by adding the annual emissions from recovery furnace Nos. 15, 18, 19, and 22; smelt dissolving tank Nos. 15, 18, 19, and 22; lime kiln Nos. 1, 2, 3, 4, and 5; and power boiler Nos. 12, 13, 16, 17, and 20. Compliance with the annual limit for VOC shall be determined by adding the annual emissions from recovery furnace Nos. 15, 18, 19, and 22; smelt dissolving tank Nos. 15, 18, 19, and 22; lime kiln Nos. 1, 2, 3, 4, and 5; power boiler Nos. 12, 13, 16, 17, and 20; and washers and oxidizers. Annual emissions from an emission unit for measured parameters shall be calculated using the average of test results collected during the year. Annual emissions from an emission unit for unmeasured parameters shall be calculated using emission factors and production data. (Order DE 00AQIS-704 and PSD-X81-10A).

FACILITY-WIDE GENERAL REQUIREMENTS [WAC 173-401-600]

These generally applicable requirements apply facility-wide, including insignificant emission units or activities. Insignificant emission units or activities, however, are not subject to monitoring, testing, recordkeeping, reporting, or compliance certification requirements.

1. The permittee cannot vary the rate of emission of a pollutant according to atmospheric conditions or ambient concentrations of that pollutant, except as directed according to air pollution episode regulations. [WAC 173-400-205]

2. The permittee shall not cause or permit emission of any contaminant if it is detrimental to the health, safety, or welfare of any person, or causes damage to property or business. [WAC 173-400-040(5)]

3. The permittee shall not install or use any means that conceal or mask an emission of an air contaminant that would otherwise violate provisions in this permit. [WAC 173-400-040(7)]

4. The permittee shall take reasonable precautions to prevent the release of air contaminants from emission units engaged in material handling, construction, demolition, or any other operation that is a source of fugitive emissions. Reasonable precautions include but are not limited to application of water to paved areas and debris piles as necessary to control fugitive dust or the timely removal or coverage of material piles. [WAC 173-400-040(3)(a)]

5. The permittee shall take reasonable precautions to prevent fugitive dust from becoming airborne and maintain and operate the source to minimize emissions. Reasonable precautions include but are not limited to application of water to paved areas and debris piles as necessary to control fugitive dust or the timely removal or coverage of material piles. [WAC 173-400-040(8)(a)]

6. The following condition is state-only and is not federally enforceable under the Clean Air Act: No deposit of particulate matter beyond property line so as to interfere unreasonably with use and enjoyment. [WAC 173-400-040(2)]

7. The following condition is state-only and is not federally enforceable under the Clean Air Act: Any person causing odor which may unreasonably interfere with use & enjoyment of property must use recognized good practice and procedures to reduce odors to a reasonable minimum. [WAC 173-400-040(4)]

8. The permittee may not cause or allow the emission of a plume from any emission unit other than a kraft recovery furnace, smelt dissolving tank, or lime kiln, which has an average opacity greater than 20% for more than 6 consecutive minutes in any 60 minute period except as provided in WAC 173-405-040(6). [WAC 173-405-040(6)]

9. Except where specific requirements are defined elsewhere, the Permittee shall assure compliance with conditions 1 through 8 by recordkeeping of actions taken by the permittee in response to complaints received by the permittee or of possible noncompliance noticed by the facility staff in day to day operations. The permittee shall assess the validity of each complaint and commence corrective action, if warranted, as soon as possible but no later than 3 working days of receiving the complaint. The permittee shall keep records of the following: complaints received; the assessment of validity; and what, if any, corrective action is taken in response to the complaint. [WAC 173-401-630]

10. The emission of sulfur dioxide from any emissions unit other than a recovery furnace or lime kiln shall not exceed 1,000 parts per million for an hourly average, corrected to 7% oxygen for combustion units. [WAC 173-405-040(11)]

11. Where this permit specifically requires continuous monitoring, the source shall, consistent with the requirements of Ecology’s Source Test Manual, calibrate, maintain and operate equipment for continuously monitoring and recording the emissions specified. The source may be temporarily exempted from monitoring and reporting requirements during periods of monitoring system malfunctions, provided that the source shows to Ecology's satisfaction that the malfunction was unavoidable and is being repaired as expeditiously as practicable. [WAC 173-400-105(5)(h)]

    Ecology recognizes that monitoring data may be lost for legitimate reasons. The permittee shall make every reasonable effort to acquire, maintain, and recover valid monitoring data. Except where an applicable requirement contains more stringent provisions, permittee shall recover valid monitoring data and recordkeeping for at least 90% of the averaging periods during each month or, if no averaging period is used, collected during each month, in which this permit requires monitoring of a process or parameter. The 10% allowance is contingent on the permittee providing an acceptable explanation for the loss of monitoring data. [WAC 173-401-615]

12. The Permittee shall at all times, including periods of abnormal operation and upset conditions, to the extent practicable, maintain and operate any affected facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practice. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to Ecology which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. During periods of upset LVF shall take immediate and appropriate corrective action to minimize emissions, including slowing or shutting down the emission unit. [WAC 173-405-040(10) and Order DE 00AQIS-704]

13. Chemical Accidental Release Program – This stationary source, as defined in 40 CFR section 68.3, is subject to part 68, the accidental release prevention regulations. This stationary source shall submit a risk management plan (RMP) by the date specified in section 68.10. This stationary source shall certify compliance with the requirements of part 68 as part of the annual compliance certification as required by 40 CFR part 70 or 71.

14. Ozone Protection - The Permittee shall comply with the applicable standards for recycling and emissions reductions pursuant to 40 CFR Part 82, Subpart F.
    a. Persons opening appliances for maintenance, service, repair or disposal must comply with the required practices pursuant to § 82.156.
    b. Equipment used during the maintenance, service, repair or disposal must comply with the standards for recycling and recovery equipment pursuant to § 82.158.
    c. Persons performing maintenance, service, repair or disposal of appliances must be certified by an approved technician certification program pursuant to § 82.161.
    d. Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with recordkeeping requirements pursuant to § 82.166. ("MVAC-like appliance" is defined at § 82.152.)
    e. Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to §82.156.
    f. Owners/operators of appliances normally containing 50 or more pounds or refrigerant purchased and added to such appliances must do so in compliance with §82.166.

15. As of March 1994, Longview Fibre shall no longer use elemental chlorine as a bleaching agent in Bleach Plant Nos. 1 and 2. [Order DE 00AQIS-704]

16 As affects IEUs, the permittee shall comply with applicable provisions of WAC 173-405(5), WAC 173-400-050(1)&(3), and WAC 173-400-060. [WAC 173-401-530(2)(b)]

17. The Permittee will continue to comply with applicable requirements with which the Permittee is in compliance. [WAC 173-401-630(3) and 510(2)(h)(iii)(A)]

    The Permittee will meet applicable requirements that become effective during the permit term on a timely basis. [WAC 173-401-630(3) and 510(2)(h)(iii)(B)]

18. Volatile Organic Liquid Storage Vessels - The Permittee shall keep records showing the dimensions and capacities of all storage vessels having capacities greater than or equal to 40 cubic meters that are used to store volatile organic liquids and for which construction, reconstruction, or modification commenced after July 23, 1984. These records are to be kept for the life of each storage vessel. [40 CFR 60.116b (a) and (b)]

19. Reserved for future use.

20. The following condition is state-only and is not federally enforceable under the Clean Air Act. The permittee cannot burn used oil not meeting standards prescribed in RCW 70.94.610(1) unless burning in a permitted unit (RCW 70.94.610(2)(a)). [RCW 70.94.610]

21. The permittee must comply with 40 CFR sections 61.145 and 61.150 and WAC 173-400-075 if asbestos-containing material is present above specified quantities in a facility being demolished or renovated. [40 CFR Part 61, Subpart M]

21a. National Emissions Standards for Hazardous Air Pollutants from the Pulp and Paper Industry.

    a) Permittee shall comply with the applicable requirements of the National Emissions Standards for Hazardous Air Pollutants from the Pulp and Paper Industry (40 CFR §§ 63.440-458), including applicable portions of the General Provisions (40 CFR §§ 63.1 through 63.11) on April 16, 2001; with the exception of the standards for Kraft pulp system provisions of § 63.443 (not including § 63.443(a)(1)(i) and § 63.443(e)(1) which shall be compiled with by April 16, 2001), for which the compliance deadline is on April 16, 2006. 40 CFR § 63.440(d).
    b) Permittee shall submit the initial notification report specified under 40 CFR § 63.9(b)(2) on April 16, 1999. [40 CFR § 63.455(a)]
    c) Permittee shall submit, with the initial notification report required in paragraph b above, and every two years thereafter, a non-binding control strategy report

containing at a minimum, in addition to the information required under 40 CFR § 63.9(b)(2) the following:

i) A description of the emission controls or process modifications selected for compliance with the control requirements in this standard.

ii) A compliance schedule, including the dates by which each step toward compliance will be reached for each emission point or sets of emission points.

21b. Operating and maintenance manuals for all equipment that has the potential to affect emissions to the atmosphere shall be developed and followed. Copies of the manuals shall be available to the department. Emissions that result from a failure to follow the requirements of the manuals may be considered proof that the equipment was not properly operated and maintained. [Order DE 00AQIS-704]

21c. Ecology may modify conditions contained herein, pursuant to legal requirements, based on air quality, emissions monitoring results, or upon the request of LVF. [Order DE 00AQIS-704]

MONITORING, RECORDKEEPING & REPORTING

Monitoring Requirements [WAC 173-401-630(5)(b)]

22. Unit-Specific Requirements. The permittee shall conduct routine monitoring of emissions in accordance with the program of monitoring or testing required for specific emission units in conditions A through H of this permit. [WAC 173-405-072]

23. Unavoidable Excess Emissions. This condition applies, where applicable, to excess emissions that are claimed to be unavoidable pursuant to WAC 173-400-107. The permittee may include in its monthly reports demonstrations that excess emissions were unavoidable, consistent with the requirements of WAC 173-400-107. The permittee shall have the burden to prove that deviations from permit terms were unavoidable. Excess emissions that are unavoidable are excused and are not subject to penalty. [WAC 173-400-107]

24. Violation Duration. A violation of an emission limit is presumed to commence at the time of the testing, recordkeeping or monitoring indicating noncompliance, and to continue until the time of retesting, recordkeeping or monitoring that indicates compliance. This presumption may be defeated if credible evidence shows that the violation was of longer duration, that there were intervening days during which no violation occurred or that the violation was not continuing in nature. [42 U.S.C. 7413(e)(2)]. The permittee may conduct monitoring or testing more frequently than required by this permit.

25. Insignificant Emission Units. The permittee is not subject to any testing, monitoring, reporting, or recordkeeping for the insignificant emission units or activities listed. [WAC 173-401-530(2)(c)]

25a. Sampling ports and platforms must be provided for each affected source after the final pollution control device. The ports must meet the requirements of Reference Method 1 of 40 CFR, Part 60, Appendix A. Other arrangements may be acceptable if approved by the department prior to installation. Adequate permanent and safe access to the test ports must be provided. [Order DE 00AQIS-704]

25b. Ecology may require the continuous emission monitoring quality assurance plans submitted to Ecology on July 26, 1991 and December 22, 1995 to be periodically updated. The updates shall satisfy 40 CFR, Part 60, Appendix F. [Order DE 00AQIS-704]

25c. Data required to demonstrate compliance with emission limits shall be reported in written form to the Washington Department of Ecology Industrial Section or its authorized representative at least monthly (unless a different testing and reporting schedule has been approved by Ecology). The report shall be submitted in conformance with the time requirements included in WAC 173-405, but in no case later than thirty days after the end of the calendar month being reported. The report shall be in a format approved by Ecology. Report contents shall include but not be limited to the following: [Order DE 00AQIS-704 and PSD-X81-10A].

a. The average daily production of air dried unbleached pulp.
b. Process or control equipment operating parameters.
c. The daily maximum and average concentration, in the units of the standard, for each pollutant monitored.
d. The duration and nature of any monitor down-time.
e. Results of any monitor audits or accuracy checks.
f. Results of any stack tests using approved Ecology or EPA test methods with acceptable QA/QC.

For each occurrence of monitored emissions or process parameters in excess of the standard the report shall include the following:

g. The time of the occurrence.
h. Magnitude of the emission or process parameters excess.
i. The duration of the excess.
j. The probable cause.
k. Any corrective actions taken or planned.
l. Any other agency contacted.
m. Signature of responsible person.

Recordkeeping Requirements

26a. The permittee shall keep records of any periodic and continuous monitoring required by this permit. These records shall include the following, where applicable:

a. The date, place as defined in requirement, and time of sampling or measurement;
b. The date(s) analysis were performed;
c. The company or entity that performed the analysis;
d. The analytical techniques or methods used;
e. The results of such analysis;
f. The operating conditions existing at the time of sampling or measurement. [WAC 173-401-615(2)(a); WAC 173-400-105]

26b. LVF shall retain copies for at least five years from the due date of all studies, tests results, and reports required by Orders superseded by Order DE 00AQIS-704. [Order DE 00AQIS-704]

27. The permittee shall keep records describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes. [WAC 173-401-724(5)]

28. The permittee shall retain records of all required monitoring data and support information for a period of 5 years from the date of monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. [WAC 173-401-615(2)(c)]

29. The permittee shall maintain a contemporaneous record of any deviation from the requirements of this permit. [WAC 173-401-615(3)(b)]

Reporting Requirements [WAC 173-401-520, -615(3), & -710]

30. In addition to any emission unit specific reporting requirements identified below, emission unit specific reporting requirements are identified in conditions A through H.

31. Report within 15 days of the end of each month average daily production of air-dried unbleached pulp. [WAC 173-405-072(4)]

32. Monitoring reports required by this permit must be submitted to Ecology within 15 days of the end of each calendar month. [WAC 173-405-072]. The reports must clearly identify all instances of deviations from permit requirements. [WAC 173-401-615(3)(a)]

33. Submit an inventory of emissions from the source each year no later than 105 days after the end of the calendar year; maintain records of information necessary to substantiate any reported emissions. [WAC 173-400-105(1)]

34. The permittee shall promptly submit a report of any deviations from permit conditions. [WAC 173-401-615(3)(b)]

a. For purposes of this permit, submitting a report "promptly" means the following: (a) if the deviation presents a potential threat to human health or safety, the report shall be made as soon as possible but no later than 12 hours after the discovery of the deviation; (b) for other deviations, "promptly" means that the deviations are identified in the respective monthly report.

b. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken. [WAC 173-401-615(3)]. The permittee may include in its reports demonstrations that excess emissions were unavoidable, consistent with the requirements of WAC 173-400-107.

35. Certification of truth, accuracy and completeness. Any application form, report or compliance certification required to be submitted by this permit or by Chapter 401 WAC shall contain certification by a responsible official of truth, accuracy and completeness. Where the permit requires reporting more frequently than once every 3 months the

responsible official's certification need only be submitted once every 3 months covering all required reporting since the date of the last certification. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. [WAC 173-401-520]

36. All reports and renewal applications required by this permit shall be submitted to:

Department of Ecology
Industrial Section
P.O. Box 47706
Olympia, WA 98504-7706

37. Compliance Certification. The permittee shall submit a report to the Department of Ecology and to EPA Region 10 12 months after the effective date of this permit and every year thereafter, within 45 days after the close of the year that the certification covers, certifying compliance with the terms and conditions contained in this permit. The certification shall describe the following:

a. the permit term or condition that is the basis of the certification;
b. the compliance status;
c. whether compliance was continuous or intermittent; and
d. the methods used for determining compliance. [WAC 173-401-630(5)]

The permittee is not required to certify compliance for insignificant emission units or activities. [WAC 173-401-530(2)(d)]

STANDARD TERMS & CONDITIONS

38. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of chapter 70.94 RCW and, for federally enforceable provisions, a violation of the FCAA. Such violations are grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. [WAC 173-401-620(2)(a)]

39. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. [WAC 173-401-620(2)(b)]

40. Permit Actions. This permit may be modified, revoked, reopened, and reissued or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. [WAC 173-401-620(2)(c)]

41. Property Rights. This permit does not convey any property rights of any sort, or any exclusive privilege. [WAC 173-401-620(2)(d)]

42. Duty to Provide Information. The permittee shall furnish to the permitting authority, within a reasonable time, any information that the permitting authority may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the permitting authority copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee may furnish such records directly to the EPA administrator along with a claim of confidentiality. Permitting authorities shall maintain confidentiality of such information in accordance with RCW 70.94.205. [WAC 173-401-620(2)(e)]

43. Permit Fees. The permittee shall pay fees as a condition of this permit in accordance with the permitting authority's fee schedule. Failure to pay fees in a timely fashion shall subject the permittee to civil and criminal penalties as prescribed in chapter 70.94 RCW. [WAC 173-401-620(2)(f)]

44. Emissions Trading. No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in this permit. [WAC 173-401-620(2)(g)]

45. Severability. If any provision of this permit is held to be invalid, all unaffected provisions of the permit shall remain in effect and be enforceable. [WAC 173-401-620(2)(h)]

46. Permit Appeals. This permit or any conditions in it may be appealed only by filing an appeal with the pollution control hearings board and serving it on the permitting authority within thirty days of receipt pursuant to RCW 43.21B.310. This provision for appeal in this section is separate from and additional to any federal rights to petition and review under § 505(b) of the FCAA. [WAC 173-401-620(2)(i)]

47. Permit Continuation. This permit is issued for a 5 year term; however, this permit and all terms and conditions contained therein, including any permit shield provided under WAC 173-401-640, shall not expire until the renewal permit has been issued or denied if a timely and complete application has been submitted. An application shield granted pursuant to WAC 173-401-705(2) shall remain in effect until the renewal permit has been issued or denied if a timely and complete application has been submitted. [WAC 173-401-620(2)(j)]

48. Inspection and Entry. Upon consent of the permittee or upon presentation of credentials and other documents as may be required by law, the Department of Ecology or an authorized representative shall be allowed to:
    (1) Enter the source;
    (2) Have access to and copy at reasonable times any records that must be kept under this permit;
    (3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
    (4) As authorized by WAC 173-400-105 and the FCAA, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements.

    [WAC 173-400-105(4); WAC 173-401-630(2)]

PERMIT SHIELD

Compliance with the conditions in this permit is deemed to constitute compliance with applicable requirements as contained in this permit on which the term or condition is based, as of the date the permit is issued. [WAC 173-401-640(1)]

The Department of Ecology has determined that the requirements listed in Appendix C to this permit do not apply to the facility, as of the date the permit is issued, for the reasons specified. [WAC 173-401-640(2)]

APPENDIX A – LONGVIEW FIBRE COMPANY SOURCE TEST METHODS

LFCo Routine Method No. 201 - SULFUR DIOXIDE MEASUREMENT BY MODIFIED EPA METHOD 6C USING A TOTAL REDUCED SULFUR ANALYSIS SYSTEM

LFCo Routine Method No. 202 - GRAB BAG SAMPLING FOR TOTAL REDUCED SULFUR DETERMINATION AT SMELT DISSOLVING TANK VENTS

LFCo Routine Method No. 296 - TOTAL REDUCED SULFUR (TRS) SAMPLING AND ANALYSIS OF GAS IN THE WEAK NCG SYSTEM

LFCo Routine Method No. 201

SULFUR DIOXIDE MEASUREMENT BY MODIFIED EPA METHOD 6C
USING A TOTAL REDUCED SULFUR ANALYSIS SYSTEM

1. Principle
   Sulfur dioxide (SO_2) concentration is measured by a modified EPA Method 6C, using a total reduced sulfur (TRS) analysis system.
2. Description
   Stack gases are extracted and conditioned by an existing TRS sampling unit. After transport to the TRS analyzer rack assembly, the sample bypasses the SO_2 regenerative scrubber and thermal oxidizer and is introduced directly to the SO_2 analyzer, which measures the concentration of SO_2 using pulsed fluorescence. The bypass is effected by manual reconfiguration of the TRS analysis system plumbing.
3. Equipment
   a. TRS analysis system
   b. 1/4" Teflon tubing with Swagelok fittings
   c. Crescent wrench
   d. Gas cylinder containing SO_2 in N_2
   e. Two-stage pressure regulator with CGA 660 fitting
4. Safety
   Use of the SO_2 gas cylinder requires training in the handling of compressed gas cylinders.
   CAUTION: SO_2 is a suffocating and poisonous gas via inhalation and contact with skin, eyes and mucous membranes. SO_2 gas will cause irritation of the eyes, nose and throat.
   Wear safety glasses with splash protection at all times.
5. Procedure
   Disable auto-calibration cycle of TRS analysis system. Disconnect the Teflon tubes for a) the sample transport to the TRS analyzer rack assembly and b) the sample input to the SO_2 analyzer. Connect the 1/4" Teflon tube bypass at these points. If SO_2 concentrations are beyond the analysis range of the SO_2 analyzer, perform (5)(a). Allow for 3-6 hours of sampling. At the conclusion of sampling, return TRS analysis system to original configuration.
      a. Switch range dial of TRS analysis system to value for which SO_2 concentration is within analysis range. Disconnect TRS calibration gas tubing from TRS pressure regulator, and connect tube to SO_2 pressure regulator, which is fitted to a gas cylinder containing an SO_2 concentration similar to that of the stack. Perform manual calibration of SO_2 analyzer and adjust output to match expected concentration readout. At the conclusion of sampling, return TRS analysis system and calibration setup to its original configuration, and then perform manual calibration of SO_2 analyzer, adjusting output as needed.
   Obtain SO_2 concentration test results, in their oxygen-corrected form, from the data acquisition system (DAS) for the TRS analysis system.
6. Quality Assurance/Quality Control
   Contact operator of source to determine operating status. This method may only be performed during normal, or steady, operation.
   Examine the most recent zero and span calibration for both the TRS and O_2 analysis systems as provided on a continuous chart recorder. This method may only be performed when the zero and span values are within 4% of scale of the expected value for O_2 and within 10% of scale of the expected value for TRS.
7. Method Review and Update
   This method may be updated to reflect changes in equipment or procedure subject to Ecology approval.

LFCo Routine Method No. 202

GRAB BAG SAMPLING FOR TOTAL REDUCED SULFUR DETERMINATION
AT SMELT DISSOLVING TANK VENTS

1. Principle
   A gas sample is withdrawn from a source, collected in a Tedlar bag, and analyzed for total reduced sulfur (TRS) concentration using a TRS analysis system based on EPA Method 6C.
2. Description
   A gas transport pump generates negative pressure within a vacuum chamber. The sample gas outside the chamber, with its higher pressure, rushes into the Tedlar bag within the chamber via the connecting probe and tubing. The bag contents are analyzed with a TRS sampling unit.
3. Equipment
   a. Vacuum chamber
   b. Gas transport pump
   c. Tedlar bag
   d. Stainless steel probe connected to 1/4" Teflon tubing by Swagelok fittings
   e. Rubber tubing
4. Safety
   Use caution around access ports to source gas. Gases may be hot. Avoid contact or inhalation of gas. Wear safety glasses with splash protection at all times.
5. Sampling Procedure
   Assemble the sampling system: Connect Tedlar bag to the sample inlet port located inside the vacuum chamber. Connect the gas transport pump to the vacuum port of the vacuum chamber with the rubber tubing. Connect the probe and Teflon tubing to the sample inlet port located outside the vacuum chamber. Insert the probe into the source gas. Open the valve on the bag and close the vacuum chamber access opening.
   Flush the probe, tubing and bag with sample gas: Run the pump until the bag is filled. Remove the Teflon tubing connection to the vacuum chamber and cap the sample inlet port located outside the chamber. Connect the pump to the purge port of the vacuum chamber. Run the pump until the bag is completely evacuated. Return sampling system to original configuration.
   Obtain bag sample: Run the pump until the bag is filled. Open the vacuum chamber access opening and close the valve on the bag. Remove bag from chamber.
6. Analysis
   Connect the Tedlar bag to the Teflon tubing inlet to the thermoelectric heat exchanger located inside the TRS sample conditioning unit. Allow for 10-15 minutes of sampling. At the conclusion of sampling, remove bag and return TRS sample conditioning unit to original configuration.
   TRS concentration is determined by a modified EPA Method 6C. Sample gas is extracted and conditioned by the TRS sampling unit. After transport to the TRS analyzer rack assembly, the sample passes through the SO_2 regenerative scrubber and thermal oxidizer before being introduced to the SO_2 analyzer, which measures the concentration of SO_2 using pulsed fluorescence. The SO_2 concentration output is equivalent to the TRS concentration as H2S.
6. Quality Assurance/Quality Control
   Contact operator of source to determine operating status. This method may only be performed during normal, or steady, operation.
   Examine the most recent zero and span calibration for both the TRS and O_2 analysis systems as provided on a continuous chart recorder. This method may only be performed when the zero and span values are within 4% of scale of the expected value for O_2 and within 10% of scale of the expected value for TRS.
7. Method Review and Update
   This method may be updated to reflect changes in equipment or procedure subject to Ecology approval.

LFCo Routine Method No. 296

TOTAL REDUCED SULFUR (TRS) SAMPLING
AND ANALYSIS OF GAS IN THE WEAK NCG SYSTEM

1. Principle

   A gas sample is withdrawn from a source, collected in a sealed headspace-sampling vial, and analyzed for total reduced sulfur (TRS). The sample is analyzed using a gas chromatograph (GC) with a mass spectrometer detector (GC/MS), or an electron ionization detector (GC/EID). The gas is analyzed for hydrogen sulfide, methyl mercaptan, dimethyl sulfide and dimethyl disulfide.

2. Description

   The weak non-condensable gas (NCG) system is under a slight positive pressure after the weak NCG fan, so no pump is necessary. The sample gas rushes into the headspace vial by way of a small connecting tubing. Each vial is sealed immediately in the field and analyzed within 72 hours in the Main Lab with the headspace sampler and a GC. Multiple samples must be taken equally spaced over the sampling period to get a representative average.

3. Equipment

   a. Headspace sample vials
   b. Caps (aluminum rings) and headspace septums to cap the headspace vials
   c. Crimper to seal the vials
   d. 1/4", or smaller, Teflon tubing
   e. GC with a column that can adequately separate and detect TRS compounds

4. Safety

   Review the Material Safety Data Sheet for NCG before attempting this method. Be very careful not to inhale weak NCG. Use caution around access ports to source gas. Gases may be hot. Make sure no flames or sparks are present in the immediate area. Make sure no one inadvertently walks into the area while the sample valve is open. While the sample valve is open, avoid direct skin contact with NCG by using neoprene, nitrile or rubber gloves. Close the sample valve while getting ready for next sample.

   Wear safety glasses with splash protection at all times.

5. Sampling Procedure

   Assemble and label the headspace sample vials but do not crimp the caps in place. Use a watch to make sure samples are taken at equally spaced intervals. Connect the Teflon tubing to the sample valve if not already done. Open the sample valve. Insert the tip of the Teflon tube into the sample vial to the bottom of the vial. Gradually back it out to the top over a 10-second period. As the tip exits the vial, immediately slip the assembled cap into place over the top of the vial and crimp it in place. Repeat until the necessary number of samples has been taken. Record sampling times.

6. Analysis

   Bring the samples to the Main Lab. Check the caps to make sure they are on tight by twisting by hand. Reject any samples that turn by hand. Place the samples in the headspace sampler. Analyze the samples using a GC with a column that can provide reasonable separation of the gases present such as hydrogen sulfide, methyl mercaptan, dimethyl sulfide, dimethyl disulfide, acetaldehyde and air. (Currently using a J & W 30 meter x 0.32 mm GasPro column.) Set the detector to look for mass to charge ratio values in a range of 20 to 250.

   TRS concentration is determined by a method similar to EPA Method 16. Each sample of gas in a sealed headspace vial is conditioned and a portion extracted by the headspace sampler mixed with helium. A heated line carries it to the heated sample loop. After a specified time the valve switches to send the contents of the sample loop to the GC. A heated transport line carries the gas from the sample loop through the GC inlet septum to the inlet port. The GC and detector separate the compounds, the detector identifies the peaks and the computer calculates the areas under the peaks. The SO_2 concentration output, in parts per million is equivalent to the sum of the TRS concentration compounds in parts per million except dimethyl disulfide is multiplied by two to account for the conversion to sulfur dioxide.

7. Quality Assurance/Quality Control

   Contact operator of source to determine operating status. This method may only be performed during normal, or steady, operation.

   Do zero and span calibration during each run of samples. Use calibration gas samples that are about 500 ppm of each target analyte except for dimethyl disulfide, which should be about 50 ppm. Examine the most recent zero and span calibration for all the TRS compounds from the chromatograms.

8. Method Review and Update

   This method may be updated to reflect changes in equipment or procedure subject to Ecology approval.

APPENDIX B - FORMULAS FOR EMISSION CALCULATIONS

NOTE: The Permittee may use an equivalent alternative method with written approval by Ecology

Permit Conditions specifying pounds per ton of black liquor solids:

$$\frac{lbs}{ton\,BLS} = (concentration \times air\ \ flow\ rate \times unit\ conversion\ \ factor \times time\ adjustment) \div tons\ BLS\ burned$$

Concentration is measured using a reference method to measure particulate concentrations in gr/dscf.
Air Flow Rate must be representative of operation. Air flow measured during the test or a "f" factor from the federal register times heat input may be used.
Unit Conversion Factor is case specific. For particulate conversions 1 lb = 7,000 grains.
Time Adjustment is case specific and is dependent on the flow rate time unit. The measured unit is multiplied by the conversion factor to attain the desired time unit.
Tons BLS Burned is the tons of black liquor solids burned during the adjusted time period.

Permit Conditions specifying pounds per million Btus:

$$\frac{lbs}{mmBtu} = (concentration \times air\ \ flow\ rate \times unit\ conversion\ \ factor \times time\ adjustment) \div mmBtu\ applied$$

Concentration is measured using a reference method or continuous monitor. Particulate concentrations are in gr/dscf and chemical concentrations are in ppm.
Air Flow Rate must be representative of operation. Air flow measured during the test or a "f" factor from the federal register times heat input may be used.
Unit Conversion Factor is case specific. For particulate conversions 1 lb = 7,000 grains. For ppm measurements, molar mass and molar volume for the chemical being measured are used.
Time Adjustment is case specific and is dependent on the flow rate time unit. The measured unit is multiplied by the conversion factor to attain the desired time unit.
mmBtu Applied is the millions of Btu's in the fuel burned during the adjusted time period.

Permit conditions specifying pounds per day:

$$\frac{lbs}{day} = concentration \times air\ \ flow\ rate \times unit\ conversion\ \ factor \times time\ adjustment$$

Concentration is measured using a reference method or continuous monitor. Particulate concentrations are in gr/dscf and chemical concentrations are in ppm.
Air Flow Rate must be representative of operation. Air flow measured during the test or a "f" factor from the federal register times heat input may be used.
Unit Conversion Factor is case specific. For particulate conversions 1 lb = 7,000 grains. For ppm measurements, molar mass and molar volume for the chemical being measured are used.
Time Adjustment is case specific and is dependent on the flow rate time unit. The measured unit is multiplied by the conversion factor to attain the desired time unit.

Permit conditions specifying tons per year:

$$\frac{tons}{year} = \sum \frac{lbs}{day}\ for\ the\ calander\ \ year \times unit\ conversion\ \ factor$$

Unit Conversion Factor is 1 ton = 2000 lbs.

APPENDIX C - PERMIT SHIELD/INAPPLICABLE REQUIREMENTS

The following requirements do not apply to the facility as of the date of permit issuance for the reasons indicated:

CITE	BRIEF DESCRIPTION	REASON
WAC 173-400-040(1)	No visible emissions over 20% opacity for 3 minutes in any one hour, with 4 exceptions.	Opacity standards in the Kraft Pulping Mill regulations (WAC 173-405) take precedence over the general emission standards of WAC 173-400. WAC 173-405-040.
WAC 173-400-040(3)(b)	Emissions unit identified as a significant contributor to nonattainment must use reasonable and available control methods to control emissions of contaminants for which area is designated nonattainment.	No emissions unit at the facility have been identified as a significant contributor to nonattainment.
WAC 173-400-040(6)	General limit of 1,000 ppmdv SO_2.	SO_2 standards for emission units at kraft pulping mills in the Kraft Pulping Mill regulations (WAC 173-405) take precedence over the general emission standards of WAC 173-400. WAC 173-405-040.
WAC 173-400-040(8)(b)	Sources of fugitive dust identified as significant contributors to a PM-10 nonattainment area must use RACT to control fugitive dust emissions.	Facility not located near a PM-10 nonattainment area.
WAC 173-400-050(1)	No particulate emissions in excess of 0.1 grain/dscf from combustion units, except no particulate emissions in excess of 0.2 grain/dscf from units combusting wood derived fuels for production of steam.	Particulate standards for combustion sources in the Kraft Pulping Mill regulations (WAC 173-405) take precedence over the general emission standards of WAC 173-400. WAC 173-405-040.
WAC 173-400-060	No particulate emissions in excess of 0.1 grain/dscf in general process units.	Inapplicable for smelt dissolving tanks #15, #18, #19. & #20. Particulate standards in the Kraft Pulping Mill regulations (WAC 173-405) take precedence over the general emission standards of WAC 173-400. WAC 173-405-040.
WAC 173-400-070(2)(a)	Hog fuel boilers must meet requirements of WAC 173-400-040 & -050(1), with exceptions.	Specific emission standards for combustion sources in the Kraft Pulping Mill regulations (WAC 173-405) take precedence over the general emission standards of WAC 173-400. WAC 173-405-040.
WAC 173-400-100	Registration required for listed sources, excluding sources subject to the operating permit program, after EPA grants interim or final approval to the state program.	Facility is subject to the operating permit program; EPA has granted interim approval for the state program.
WAC 173-400-105(5)(a)	Continuous opacity & SO_2 monitoring & recording required for fossil fuel-fired steam generators that are not subject to an NSPS, except where capacity is <250 million BTU/hr heat input or where there is an annual avg. capacity factor of ≥30%.	Inapplicable to power boiler #20 Power Boiler which is subject to NSPS requirement. WAC 173-400-105(g)(i).
WAC 173-400-105(5)(d)	Continuous opacity monitoring & recording required for wood residue fuel-fired steam generators w/ capacity of ≥100 million BTU/hr heat input that are not subject to an NSPS.	Inapplicable to power boiler #20 Power Boiler which is subject to NSPS requirement. WAC 173-400-105(g)(i).

CITE	BRIEF DESCRIPTION	REASON
WAC 173-400-105(6)	Submittal required for raw material or fuel change resulting in SO_2 increase ≥40 T/yr. Applies to sources that are not subject to operating permit program.	Facility is subject to the operating permit program.
WAC 173-400-151	Retrofit requirements for visibility protection. BART required for sources to which significant visibility impairment of a Class 1 area is reasonably attributable.	Facility has not been identified as a source impacting a Class I area.
WAC 173-405-040(7) *[STATE ONLY, NOT FEDERALLY ENFORCEABLE]*	Continuously employ best practicable operation and maintenance procedures for recovery furnaces or lime kilns with an alternative opacity limit.	Facility does not have any alternative opacity limits for recovery furnace or lime kiln.
WAC 173-405-077	Provisions of WAC 173-400-105(5) (Report of startup, shutdown, etc.) apply.	Old WAC 173-400-105(5) has been deleted from state regulations and the SIP.
Chapter 173-410 WAC	Sulfite pulping mill regulations.	Inapplicable to mill with the exception of the NSSC facility.
WAC 173-410-040(1)(a)	SO_2 emission limits for incineration of spent sulfite liquor.	Spent sulfite liquor not incinerated in NSSC system.
WAC 173-410-040(1)(e)	SO_2 emission limits for sulfite recovery systems.	Chemical recovery not conducted in NSSC system.
WAC 173-410-040(2)(a)&(b)	Particulate emission limits for sulfite recovery systems.	Chemical recovery not conducted in NSSC system.
WAC 173-410-040(2)(c)(i)&(ii)	Particulate emission limits for units combusting wood for steam at sulfite mills.	Steam production not conducted in NSSC system.
WAC 173-410-040(5)	TRS emission limits for sulfite recovery systems.	Chemical recovery not conducted in NSSC system.
WAC 173-410-067	Provisions of WAC 173-400-105(5) (Report of startup, shutdown, etc.) apply.	Old WAC 173-400-105(5) has been deleted from state regulations and the SIP.
Chapter 173-433 WAC	Solid fuel burning device regulations. Applies to wood stoves and fireplaces.	Facility does not operate such devices.
Chapter 173-435 WAC	Air emergency episode plan including source emission reduction plan (SERP) requirements.	Inapplicable except for 040, 050(2), and 060(5).
Chapters 173-470, 474, 475, 480, 481 WAC	Ambient air quality standards.	WAC 173-401-200(4)(xii) states that AAQS apply to only temporary sources.
Chapter 173-490 WAC	Emission standards and controls for sources of VOCs.	Applies only to facility types specified in the regulation; pulp and paper mills are not specified.
40 CFR Part 60 subpart Da	NSPS for fossil fuel fired steam generators constructed after September 18, 1978.	Subpart GG – Stationary Gas Turbines NSPS - applies to the cogen and takes precedence.
40 CFR Part 60 subpart Db	NSPS for steam generators constructed after June 19, 1984 with a heat input rating >100 mmBtu/hr.	Inapplicable to power boilers #12, #13, #16. #17, & #20; and recovery furnaces #15, #18, & #19 which were constructed prior to the applicability date. Since then, there was no occurrence of a physical change or change in method of operation which increased pollutants to which a standard applied.
40 CFR Part 60 subpart Dc	NSPS for steam generators constructed after June 9, 1989, with design heat input rating of >10 mmBtu/hr and <100 mmBtu/hr.	Facility has no units this size.
40 CFR 60.43(a)(2)	SO_2 emission limits for subpart D facilities that combust solid fossil fuel, alone or with wood residue fuel.	Facility does not combust solid fossil fuel.

CITE	BRIEF DESCRIPTION	REASON
40 CFR 60.44(a)(3)	NOx emission limits for to subpart D facilities that combust solid fossil fuel, alone or with wood residue fuel.	Facility does not combust solid fossil fuel.
40 CFR 60.44(a)(4)&(5)	NOx emission limits for to subpart D facilities that combust lignite, alone or with wood residue fuel.	Facility does not combust lignite.
40 CFR 60.284(b)(1)	Applies to units burning emissions from digester systems, brownstock washer systems, multiple-effect evaporator systems, or condensate stripper systems in an incinerator.	Facility does not burn in an incinerator.
40 CFR 60.284(b)(2)	Requirement for scrubber monitoring at NSPS lime kiln.	Inapplicable at lime kiln 5 because a scrubber is not used.
40 CFR 60 Subpart K	NSPS for petroleum storage vessels constructed or modified after 6/11/73 and prior to 5/19/78.	Products stored by LVF do not contain petroleum products as defined in Section 60.111a(b).
40 CFR 60 Subpart Ka	NSPS for petroleum storage vessels constructed or modified after 5/18/78 and prior to 7/23/84.	Products stored by LVF do not contain petroleum products as defined in Section 60.111a(b).
40 CFR 60 Subpart Kb	NSPS for petroleum storage vessels constructed or modified after 7/23/84.	Product vapor pressure below volatile organic liquid threshold.
40 CFR 72, 73, 74, 75, 76, 77, and 78	Acid Rain Program	Inapplicable to Cogen 23 per EPA letter dated October 9, 1998.

APPENDIX D – ORDERS AND PERMITS

Order No. DE 01AQIS-2038

NOC Order No. DE 00AQIS-1627

Order No. DE 00AQIS-704

Final 2000 Revision of No. PSD-X81-10A

Order No. DE 99AQ-I052